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THE DECLINE OF LOG HOUSE CONSTRUCTION
IN BLOUNT COUNTY, TENNESSEE

A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

John T. Morgan

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ABSTRACT

The log house is an important element of the architectural heritage of much of the eastern United States. In some areas, such as East Tennessee, log construction was not replaced by frame construction until the late nineteenth century.

Several reasons have been presented in the literature for the decline of log house construction, but none of them had been tested empirically. This study determined to what extent the reasons given for the decline of log house construction explain the decline of log dwelling construction in Blount County, Tennessee. The study analyzed the influence of five factors: (1) relative affluence of house builder, (2) a changing agricultural economy, (3) social stigma, (4) changes in sawmilling and lumbering, and (5) innovations in frame construction.

Two of the factors, changes in sawmilling and lumbering and innovations in frame construction, played major roles in the decline of log construction in the study area, while changes in the agricultural economy appear to have been of little importance in the shift from log to frame construction. It is difficult to assess the influence of relative affluence and the social stigma of living in a log house, although both were responsible for the abandonment of some log structures as well as the construction of some frame dwellings in Blount County.

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CHAPTER I

INTRODUCTION

I. BACKGROUND

Study of the cultural landscape and its elements has been a tradition in American geography since publication of Carl Sauer's pioneer work, "Morphology of the Landscape," in 1925.¹ No other element of the cultural landscape has received as much attention as folk housing.² The value of studying folk houses has been

¹Carl Sauer, "Morphology of the Landscape," University of California Publications in Geography, Vol. 2, No. 2 (1925), pp. 19-54. Recent thematic treatments of landscape include John Fraser Hart, The Look of the Land (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1975); D. W. Meinig, Editor, The Interpretation of Ordinary Landscapes: Geographical Essays (New York: Oxford University Press, 1979); and Peirce Lewis, "Learning from Looking: Geographic and Other Writing about the American Cultural Landscape," American Quarterly, Vol. 35 (1983), pp. 242-261.

²The development of the study of American folk houses is synonymous with the career of Fred B. Kniffen, whose seminal work, "Louisiana House Types," was published in 1936, Annals of the Association of American Geographers, Vol. 26 (1936), pp. 179-193. His later work, "Folk Housing: Key to Diffusion," was the stimulus for recent studies in folk architecture, Annals of the Association of American Geographers, Vol. 55 (1965), pp. 549-577. Among the more important recent works on the subject are Eugene Wilson, Alabama Folk Houses (Montgomery: Alabama Historical Commission, 1975); Henry Glassie, Folk Housing in Middle Virginia (Knoxville: University of Tennessee Press, 1975); Terry G. Jordan, Texas Log Buildings (Austin: University of Texas Press, 1978) and American Log Buildings (Chapel Hill: University of North Carolina Press, 1985); and Milton B. Newton, Jr., and Linda Pulliam-DiNapoli, "Log Houses as Public Occasions: A Historical Theory," Annals of the Association of American Geographers, Vol. 67 (1977), pp. 360-383.

expressed by several cultural geographers, including John Fraser Hart, who stated:³

The study of house types is a central theme in cultural geography, because no other structure provides better insight into the folk culture of an area . . . in selecting any one (house) form a man is able to demonstrate his artistry, advertise his beliefs, and flaunt his wealth. Perhaps nothing tells so much about the values a man holds as the kind of house in which he chooses to live.

According to Kniffen, housing ". . . reflects cultural heritage, current fashion, functional needs and the positive and negative aspects of non-cultural environment."⁴

Examination of major changes in an area's housing character is important because such a change is indicative of significant modifications in the basic economy or culture.⁵ As Peirce Lewis has stated, "If a people changes its collective mind about its houses, there is a good chance it has changed its mind about many other things as well."⁶

II. DOMINANCE AND DECLINE OF LOG HOUSE CONSTRUCTION

The log house is an important element of the architectural heritage of much of the eastern United States. Numerous students

³Hart, op. cit., p. 153.

⁴Kniffen, op. cit., p. 549.

⁵Fred Kniffen, "To Know the Land and Its People," Landscape, Vol. 9, No. 3 (Spring 1960), p. 22; and Peirce F. Lewis, "Axioms for Reading the Landscape," in Meinig, op. cit., p. 15.

⁶Peirce Lewis, "Common Houses, Cultural Spoor," Landscape, Vol. 19 (1975), p. 3.

of the cultural landscape have described the tradition of log construction in works ranging from detailed small-area studies to general studies of log housing in large areas.⁷ In some areas log construction was seldom practiced, whereas in others the log house was an important landscape feature only during the initial period of settlement. In yet other areas, particularly the Upland South, the log house dominated the landscape for a much longer period. In such areas log construction typically was not replaced by frame construction until the latter half of the nineteenth century, and

⁷Studies entirely or partially devoted to characteristics and geographic and historic patterns of log house construction in the Eastern United States include Henry Glassie, "The Appalachian Log Cabin," Mountain Life and Work, Vol. 39, No. 4 (1963), pp. 5-14 and "Types of the Southern Mountain Cabin," in Jan H. Brunvand, Editor, The Study of American Folklore (New York: W. W. Norton, 1968), pp. 338-370; Donald Hutslar, The Architecture of Migration: Log Construction in the Ohio Country, 1750-1850 (Athens, Ohio: Ohio University Press, 1986); Jordan, op. cit. and "Log Construction in the East Cross Timbers of Texas," Proceeding of Pioneer America Society, Vol. 2 (1973), pp. 107-124; Kniffen, op. cit.; Fred Kniffen and Henry Glassie, "Building in Wood in the Eastern United States: A Time-Place Perspective," Geographical Review, Vol. 56 (1966), pp. 40-66; William Lynwood Montell and Michael Lynn Morse, Kentucky Folk Architecture (Lexington: University Press of Kentucky, 1976); John Morgan, "An Examination of the Log Dwellings in a Cumberland Plateau County of East Tennessee," Proceedings of Conference on Appalachian Geography (Athens, West Virginia: Geography Department, Concord College, 1982), pp. 113-125; John Morgan and Joy Medford, "Log Houses in Grainger, County, Tennessee," Tennessee Anthropologist, Vol. 5, No. 2 (1980), pp. 137-158; Harold R. Shurtleff, The Log Cabin Myth (Gloucester, Massachusetts: Peter Smith, 1967); C. A. Weslager, The Log Cabin in America: From Pioneer Days to the Present (New Brunswick, New Jersey: Rutgers University Press, 1969); Wilson, op. cit.; and Wilbur Zelinsky, "The Log House in Georgia," Geographical Review, Vol. 43 (1953), pp. 173-193.

in some locales the log house remained the dominant dwelling until the early part of the twentieth century.⁸

The vast amount of literature on the log house has been devoted to understanding its origin and diffusion and the geographic variations in its form and construction characteristics. Surprisingly, research dedicated to understanding the processes responsible for the decline of log house construction is lacking.

III. REASONS FOR THE DECLINE OF LOG CONSTRUCTION

Although no research has been specifically devoted to the study of the decline of log house construction, several scholars have mentioned factors responsible for its decline in the eastern United States. Terry G. Jordan attributed the decline in log dwelling construction in Texas, at least in part, to a social stigma:⁹

⁸Harriette Simpson Arnow, Seedtime on the Cumberland (New York: The Macmillan Company, 1960), pp. 273-274; John Richard Dennett, The South As It Is: 1865-1866 (New York: The Viking Press, 1965), pp. 95, 166, 185, 243; Glassie, "The Appalachian Log Cabin," op. cit., p. 10; J. B. Killebrew, The Resources of Tennessee (Nashville, Tennessee: Tavel, Eastman and Howell, 1874), pp. 438, 459, 551-552, 773; Kniffen and Glassie, op. cit., pp. 48-66; Montell and Morse, op. cit., pp. 9, 16; Robert Somers, The Southern States Since the War 1870-71 (University, Alabama: University of Alabama Press, 1965, reprint of 1871 edition), pp. 118-119, 275; Shurtleff, op. cit.; Weslager, op. cit., pp. 126-132; Stanley Willis, "Log Houses in Southwest Virginia, Tools Used in their Construction," Virginia Cavalcade, Vol. 21, No. 4 (Spring 1972), p. 37.

⁹Jordan, op. cit., p. 5.

Log houses became symbols of the frontier, of backwardness, of deprivation. Status could be gained by discarding the log house and replacing it with one of frame, brick, or stone. At the very least, socially upward-mobile folk were expected to conceal the logs with milled siding.

Social status was also one of the reasons given by Eugene M. Wilson for the shift from log to frame construction in Alabama:¹⁰

The addition of weatherboarding, bricks, and other refinements, and the change from log to frame houses were other steps toward higher social and economic status.

Carl Lounsbury associated the decline of log house construction in North Carolina to the passing of frontier conditions and the rise of a market-oriented agricultural economy.¹¹ Richard Pillsbury related the persistence and decline in log house construction in Pennsylvania to the "local economic situation." He stated:¹²

In areas of least economic development . . . log construction seems to have been important for a longer period and is more evident on the landscape today. By contrast, in more affluent areas, log construction seems to have been used for a shorter period, and a few examples survive until today.

Regional economic status was one of the factors associated with the decline of log house construction in Ohio, according to Donald A. Hutslar, who wrote that "By mid-nineteenth century, the log house had become confined to the rapidly disappearing, unsettled areas and to the less economically successful sections of the state."¹³

¹⁰Wilson, op. cit., p. 73.

¹¹Carl Lounsbury, "The Building Process in Antebellum North Carolina," North Carolina Historical Review, Vol. 60 (1983), p. 435.

¹²Richard Pillsbury, "Patterns in the Folk and Vernacular House Forms of the Pennsylvania Culture Region," Pioneer America, Vol. 9, No. 1 (1977), p. 29.

¹³Hutslar, op. cit., p. 38.

Stanley Willis attributed the decline of log construction in Southwest Virginia to regional economic change. He noted that the persistence of the log house ". . . often corresponded to the remoteness of the area," with residents in Dickenson County, for example, living ". . . in log houses until the railroad, timber, and coal industries appeared shortly before World War I."¹⁴

Other authors have attributed the decline in log house construction to the changing status of sawmills and greater availability of lumber in rural areas. Ronald D. Eller indicated that the log structure was the dominant dwelling type in remote areas of rural Appalachia before the 1880s and 1890s, because ". . . the long distances to sawmills made the construction of frame structures impractical outside of the village and valley communities. . . ."¹⁵ The construction of frame houses was thus ". . . made increasingly feasible by the construction of neighbor sawmills."¹⁶ Wilbur Zelinsky surmised that the log house was ubiquitous during the frontier era in Georgia, but steadily declined in numbers prior to the Civil War as well-to-do families began to construct frame and brick houses. He attributed the log house's post-Civil War demise to the proliferation of sawmills, which made frame construction possible even for the poor classes.¹⁷

¹⁴Willis, op. cit., p. 37.

¹⁵Eller, op. cit., p. 23.

¹⁶Ibid., p. 26.

¹⁷Zelinsky, op. cit., p. 181.

Innovations in frame construction may have played a role in the decline of log house construction. Before the mid-1800s, most of the frame houses built in the United States were constructed with heavy or timber framing, but since that time the majority of frame houses have been built with light or balloon frames.¹⁸ Hutslar has stated that log houses were no longer being constructed in most of Ohio by the mid-nineteenth century, and that ". . . the balloon frame house had become the standard reasonably priced housing."¹⁹ Wilson reported that the balloon frame house replaced the log dwelling in Alabama between 1875 and 1920.²⁰

IV. STATEMENT OF PROBLEM

Statements in the literature about the causes of the decline of log house construction have generally been related to large areas, and such statements have not been supported by detailed empirical evidence. The various reasons given for the decline of log construction are therefore essentially assertions, and none of them should be accepted until tested empirically in a specific area. An initial effort to identify and understand processes responsible for the decline of log construction can best be accomplished

¹⁸Kniffen and Glassie, *op. cit.*, p. 42.

¹⁹Hutslar, *op. cit.*, p. 38.

²⁰Wilson, *op. cit.*, pp. 25-26.

through a small-area study. The purpose of this study is to determine to what extent the assertions in the literature explain the decline of log house construction in a selected study area.

In order to assess the value of the factors mentioned in the literature, the following questions will be addressed in this study.

1. To what extent was the decline of log house construction and the concomitant rise in frame construction related to an increase in affluence among rural residents of the study area?

2. If there was a significant increase in wealth among those who abandoned log houses, was that wealth accumulated by a shift from self-sufficient agriculture to market-oriented agricultural production?

3. To what extent was the decline in log house construction related to a dramatic change in the non-agricultural sector of the economy, such as the rise of commercial lumbering and/or the diffusion of sawmills?

4. Is there evidence of a social stigma associated with living in a log house in the study area in the nineteenth century?

5. Did the adoption of innovations in framing correspond to the rise of frame house construction and the decline of log house construction?

Identification of processes associated with the decline of log house construction in the study area will either support or dispute the various reasons mentioned in the literature. Although findings from a single detailed case study can contribute to overcoming

the inadequacies of the literature, the study would have to be replicated in other areas before findings could generally be accepted.

V. STUDY AREA

A detailed study of the decline of the log house should be carried out in the Upland South, where log construction was a distinctive culture trait from the beginning of settlement until the latter half of the nineteenth century. Within the Upland South, Blount County, in East Tennessee, was selected for the specific area of study (Figure 1).

Blount County was chosen for three reasons:

1. The large number of extant nineteenth century houses in the county. More than 200 log houses and several hundred non-log dwellings erected during the nineteenth century remain on the Blount County landscape. Basic characteristics of the structures were recorded during a historic buildings survey conducted for the Tennessee Historical Commission and the Blount County Historic Trust from 1982 to 1984.²¹ The large number of extant nineteenth century houses in the county should provide for an accurate description of historic patterns in house building.

2. The distribution of log houses in the county. Although the landscape of Blount County has been substantially changed during the past several decades, log houses remain scattered throughout

²¹"Historic Buildings Survey of Blount County, Tennessee," Tennessee Historical Commission, Nashville, Tennessee.

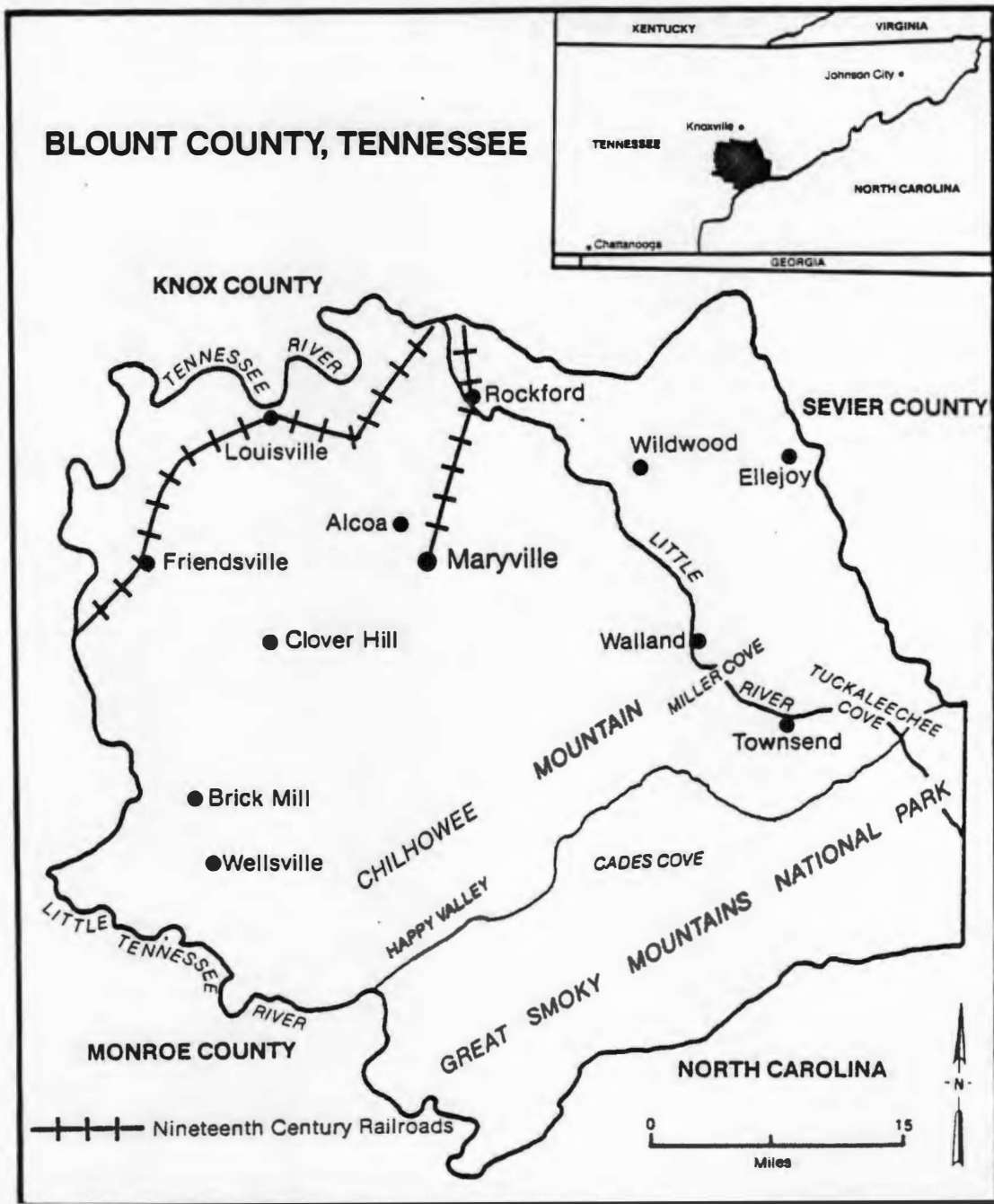


Figure 1. A general map of Blount County, Tennessee.

the inhabited portion of the county. The widespread distribution of log houses allows one to accurately describe past local variations in house construction types.

Most of the mountainous southeastern part of the county lies within the Great Smoky Mountains National Park, created in 1930.²² The great majority of the area now in the park was uninhabited before the park was established. A few log houses may have been destroyed as the park was established, but not enough to greatly alter the distributional pattern. In Cades Cove, where several hundred persons resided during the nineteenth century, the National Park Service has preserved a number of log structures.²³

3. The familiarity of the writer with the study area. The writer conducted field work in Blount County for several years and directed the recently completed historic buildings survey in the county.

VI. SOURCES OF DATA

Most of the information on Blount County's houses was obtained through field investigations, including the comprehensive historic buildings survey. Survey procedures required that all passable

²²Inez E. Burns, History of Blount County, Tennessee (Nashville, Tennessee: Benson Printing Company, 1957), p. 277.

²³Adele McKenzie, Blount County Historic Trust, Maryville, Tennessee, personal interview, June 1985.

roads in the county be travelled in an effort to locate every structure more than 50 years old. Building locations were plotted on 7-1/2 minute topographic maps, basic form and construction characteristics were recorded, and efforts were made to determine the construction date of the houses. Dates for many of the houses were obtained through interviews with county residents, especially descendants of original house owners. Construction histories of a few houses were discovered in local newspaper articles, and construction dates for many of the houses were estimated based on characteristics of the structure and/or partial construction histories furnished by local residents. Socioeconomic data on original owners were gathered primarily from government documents, especially population and agricultural census records.

Information on the social and economic history of Blount County was taken from both primary and secondary sources. The most important primary sources were the U. S. censuses for Blount County, including the unpublished schedules for both population and agriculture. County court records, nineteenth century newspapers, and elderly informants were also of considerable value. Regional and local histories were the most valuable secondary sources utilized in the dissertation research, and Inez E. Burns' excellent History of Blount County, Tennessee and A. Randolph Shields' The Cades Cove

Story were particularly useful research aids.²⁴ Background information on the social and economic history of the United States and East Tennessee was derived from a myriad of sources, including books, journals, magazines, newspapers, and nineteenth century travel journals.

VII. ORGANIZATION OF THE STUDY

The dissertation consists of nine chapters, including the introductory chapter. Chapters II and III provide necessary background for the study. In Chapter II the antecedents, diffusion, and development of log architecture in the eastern United States, with emphasis on the Upland South, are documented, while Chapter III describes the form and construction characteristics of the log house in East Tennessee. Some of the generalizations presented in the literature for log house form and construction characteristics in the Upland South do not accurately portray the character of the log house in East Tennessee. Chapter III also identifies and corrects some of these errors, based on field evidence gathered by the author in several counties of East Tennessee.

Chapters IV through VIII focus on the case study of Blount County, Tennessee. Chapter IV describes the historical pattern of house construction in the county and Chapter V describes conditions

²⁴Burns, op. cit.; A. Randolph Shields, The Cades Cove Story (Gatlinburg, Tennessee: Great Smoky Mountains Natural History Association, 1977).

under which log construction persisted during the nineteenth century. Chapters VI, VII, and VIII analyze the decline of log dwelling construction in Blount County and, in so doing, address the research questions put forth in the introductory chapter. Chapter VI examines the influence of wealth, commercial agriculture and social stigma on the decline of log construction; Chapter VII analyzes the role of sawmilling and commercial lumbering in the decline of the log house; and Chapter VIII assesses the relationship between innovations in frame construction and the decline of log construction.

Chapter IX, the concluding chapter, compares findings of this study with generalizations in the existing literature, attempts to explain any discrepancies between this study and the literature, and makes recommendations for further research on the subject.

CHAPTER II

ANTECEDENTS, DIFFUSION, AND DOMINANCE OF MIDLAND

LOG CONSTRUCTION

I. ORIGIN OF MIDLAND AMERICAN LOG ARCHITECTURE

Log buildings were not common in all the early American colonies. English settlers, who formed the largest ethnic group of colonists, were not familiar with log construction in the British Isles and thus did not build log structures in the New World.¹ They erected frame and half-timber structures that were characteristic of their native land.² Early houses of Dutch settlers were "bark huts, pit homes, and frame cottages" but not log dwellings. As soon as they could, many Dutch settlers built brick houses styled after those common in their European homeland.³

¹Harold R. Shurtleff, The Log Cabin Myth, A Study of the Early Dwellings of the English Colonists in North America (Cambridge, Massachusetts: Harvard University Press, 1939). The "myth" refers to historians' unfounded association of log houses with early seventeenth century English settlements, including Jamestown.

²Henry Glassie, "The Appalachian Log Cabin," Mountain Life and Work, Vol. 39 (1963), p. 5; and Shurtleff, op. cit., pp. 20-21, 59. Upon arrival in America, English settlers often built temporary structures and sometimes copied the conical Indian wigwam huts, which were made of vertical poles. The first permanent houses, however, were of half-timber and heavy frame construction, although some brick houses were erected as soon as brick could be imported.

³C. A. Weslager, The Log Cabin in America from Pioneer Days to the Present (New Brunswick, New Jersey: Rutgers University Press, 1969), pp. 126-132; quote is from p. 130.

The scholars who have studied the development of log architecture in the eastern United States agree that log construction was introduced to the Delaware Valley by Swedes and Finns in 1638,⁴ and that Germans brought a log tradition to southeastern Pennsylvania during the early 1700s.⁵ The area where log construction developed--the Delaware Valley and southeastern Pennsylvania--was characterized by great ethnic variety, being settled not only by the Germans, Swedes, and Finns, but also by the English and Scotch-Irish, as well as other European groups. These groups intermingled to form America's first "melting pot."⁶ From this Middle Atlantic hearth waves of slaveless yeomen farmers migrated in various directions, carrying with them the tradition of log construction. The

⁴Henry C. Mercer, The Origin of Log Houses in the United States (Doylestown, Pennsylvania: The Bucks County Historical Society, 1976), pp. 3-6. The work was reprinted from Bucks County Historical Society Papers, Vol. 5 (1924), pp. 568-583. Mercer's evidence of Swede-Finn introduction of log architecture to America comes from Amandus Johnson, Swedish Settlement on the Delaware (Appleton, New York: University of Pennsylvania Publications, 1911); reprinted in 1964 by Genealogical Publishing Company, Baltimore).

⁵Fred Kniffen and Henry Glassie, "Building in Wood in the Eastern United States: A Time-Place Perspective," Geographical Review, Vol. 56 (1966), pp. 58-59; Henry Glassie, "The Appalachian Log Cabin," Mountain Life and Work, Vol. 39 (1963), pp. 5-6; Robert C. Bucher, "The Continental Log House," Pennsylvania Folklife, Vol. 12 (Summer 1962), p. 14; and Thomas J. Wertenbaker, The Founding of American Civilization: The Middle Colonies (New York: Charles Scribner's Sons, 1938), pp. 298-303.

⁶Terry G. Jordan and Lester Rowntree, The Human Mosaic: A Thematic Introduction to Cultural Geography (San Francisco: Canfield Press, 1976), p. 13.

domain of the Middle Atlantic hearth is referred to as the Midland culture area.⁷ An extension of the Midland culture area is the Upland South culture area, where log construction remained a characteristic culture trait during much of the nineteenth century.⁸

Fred Kniffen and Henry Glassie described Scandinavian log construction as being characterized by round logs with notches "on the top or both sides of the log about a foot from the end, producing a

⁷Terry G. Jordan, American Log Buildings: An Old World Heritage (Chapel Hill: University of North Carolina Press, 1985), p. 7.

⁸The concept of the Upland South culture area was first put forth by historian Frederick Jackson Turner, who delimited it as being "between the falls of the rivers of the South Atlantic colonies on the one side and the Allegheny mountains on the other"; Turner, The Frontier in American History (New York: Henry Holt and Company, 1920), p. 164.

The limits of the Upland South vary considerably on existing maps of American culture areas. Jordan and Rowntree and Zelinsky delimit the Upland South to include most of the states of West Virginia and Kentucky; the western halves of Virginia and North Carolina; upper South Carolina and Georgia; northeastern Alabama; Tennessee, with the exception of the extreme western section; extreme southern Ohio, Indiana and Illinois; and the Ozark area of Missouri, Arkansas, and Oklahoma. In addition, Jordan and Rowntree include southern Oklahoma and central Texas on their map of the Upland South; Jordan and Rowntree, op. cit., p. 12; Wilbur Zelinsky, The Cultural Geography of the United States (Englewood Cliffs, New Jersey: Prentice-Hall, 1973), pp. 118-119.

The map of Milton Newton, however, portrays the Upland South as considerably larger in area. Of particular significance is Newton's extension of the Upland South eastward in the Carolinas and southward to include almost all of Georgia, Alabama, and Mississippi; Milton Newton, "Cultural Preadaption and the Upland South," Geoscience and Man, Vol. 5 (1974), p. 149. For an additional discussion and map of culture areas in the United States, see Henry Glassie, Pattern in the Material Folk Culture of the Eastern United States (Philadelphia: University of Pennsylvania Press, 1968), pp. 33-158.

characteristic overhang.⁹ Each log was also grooved along its bottom to secure a tight fit with the log below it. Kniffen and Glassie and others have concluded that the Scandinavian introduction of log construction had little impact on early American building patterns, and that it did not even spread to nearby English settlers in the Delaware Valley.¹⁰

German log construction has been proposed as the antecedent of log construction in the Midland and Upland South culture areas.¹¹ It was "characterized by logs notched near the end, a method that eliminated the overhang and produced a box corner. Spaces between the logs were filled--"chinked"--with clay, stones, poles, or shingles. The logs were usually squared, split, and faced, or planked." Corner notches used by the Pennsylvania Germans were the saddle, V, and full dovetail (Figure 2). The V notch was favored by the Germans for houses and substantial barns and outbuildings, but the full-dovetail notch was also used. The saddle notch was

⁹Fred Kniffen and Henry Glassie, "Building in Wood in the Eastern United States: A Time-Place Perspective," Geographical Review, Vol. 56 (1966), p. 58.

¹⁰Ibid.; Robert C. Bucher, "The Continental Log House," Pennsylvania Folklife, Vol. 12 (Summer 1962), p. 14; and Thomas J. Wertenbaker, The Founding of American Civilization: The Middle Colonies (New York: Charles Scribner's Sons, 1938), pp. 298-303.

¹¹Kniffen and Glassie, op. cit., pp. 58-59; Glassie, "The Appalachian Log Cabin," op. cit., pp. 5-6; Bucher, op. cit., p. 14; and Wertenbaker, op. cit., pp. 298-303.

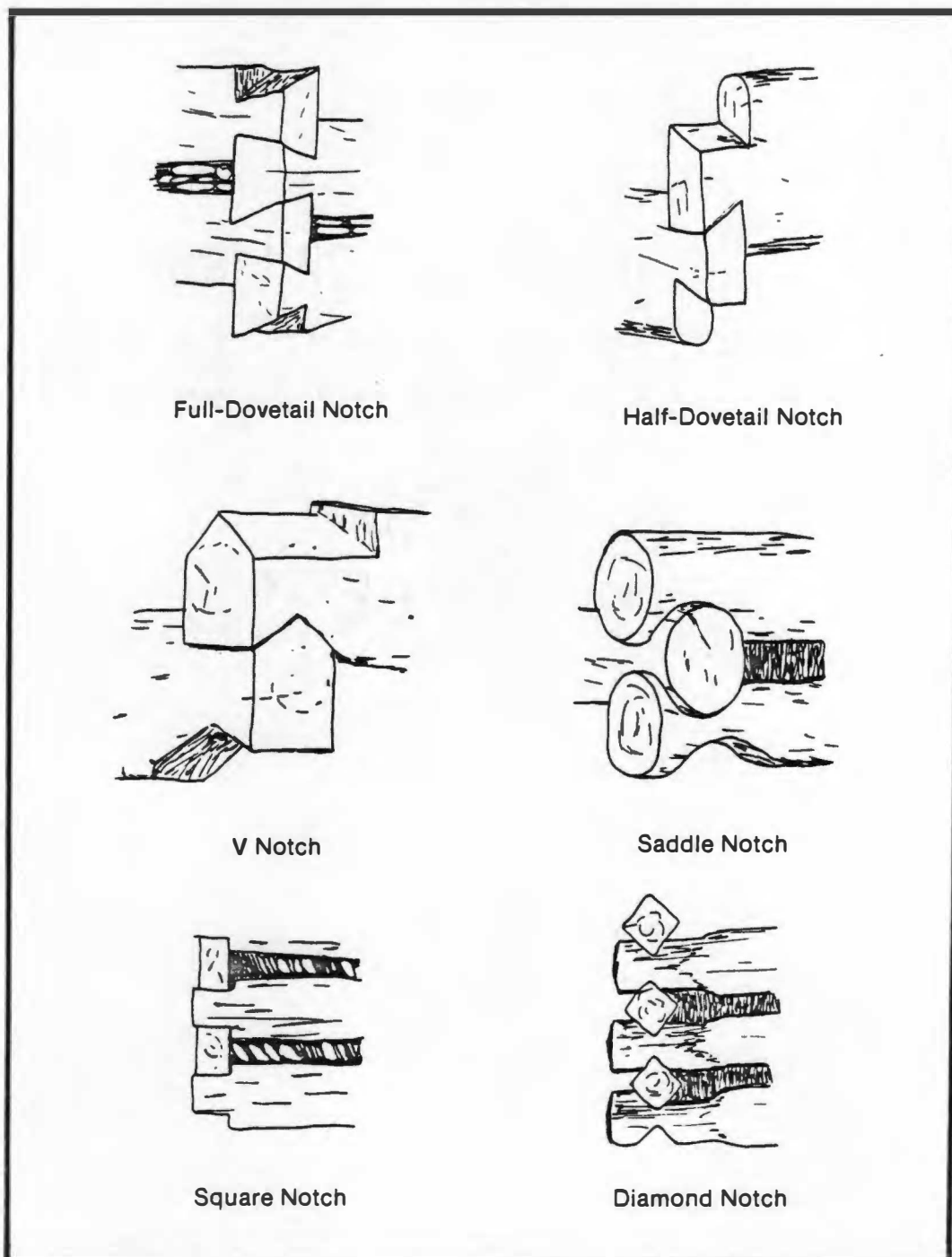


Figure 2. Notch types common in the eastern United States.

Source: After Kniffen and Glassie, *op. cit.*, pp. 53, 55.

was used primarily on less substantial barns and outbuildings.¹²

A distinctive German log house has been identified in southeastern Pennsylvania and neighboring areas. The structure "was rectangular with a three room division on the first floor" and "always had a central chimney."¹³ German settlement in southeastern Pennsylvania coincided with the arrival in the same area of large numbers of Scotch-Irish, who quickly adopted the log construction techniques of the Germans. The Scotch-Irish, however, contributed their own house plan, which was more square than the German house and had only one room rather than three. In addition, the chimney was "moved from inside, as in German tradition, to the outside, as in British tradition." This house became the typical log house built in the Upland South, and German, Scotch-Irish, and English pioneers replicated it as they moved across the western frontier.¹⁴

In addition to the log house, plans for other log structures, especially barns and outbuildings, were either brought to America from Europe by the Pennsylvania Germans or developed by them (with some Scotch-Irish influence) in southeastern Pennsylvania.¹⁵ Most of these farm buildings were rectangular, with a

¹²Kniffen and Glassie, op. cit., p. 59.

¹³Glassie, "The Appalachian Log Cabin," op. cit., p. 6.

¹⁴Ibid., p. 8.

¹⁵Most of the works on the subject are by Henry Glassie. See "The Smaller Outbuildings of the Southern Mountains," Mountain Life and Work, Vol. 40, No. 1 (Spring 1964), pp. 21-25; "The Old Barns of Appalachia," Mountain Life and Work, Vol. 41, No 2 (Summer

gable roof and a door in the gable end of the structure. These buildings included corn cribs, smokehouses, springhouses, milkhouses, granaries, and single-crib barns (with stable units).¹⁶ Perhaps the most distinguishing feature of the smaller outbuildings, such as smokehouses and springhouses, is a cantilevered, projecting roof in the front of the structure. The two cantilevers on each structure are simply extensions of the log wall plates.¹⁷ The Germans also are credited with contributing log versions of the several subtypes of the Pennsylvania barn, such as the double-crib barn and the bank or forebay barn. The various elements of these barns were imported from Europe, but according to Glassie, the combination of characteristics commonly found on Pennsylvania barns represent an American development.¹⁸

1965), pp. 21-30; "The Pennsylvania Barn in the South," Pennsylvania Folklife, Vol. 15 (Winter 1965-1966), pp. 8-19; "The Pennsylvania Barn in the South, Part II," Pennsylvania Folklife, Vol. 15 (Summer 1966), pp. 12-25; "The Double-Crib Barn in South Central Pennsylvania," Pioneer America, Vol. 1 (January 1969), pp. 9-16; "The Double-Crib Bar, Part Two," Pioneer America, Vol. 1 (July 1969), pp. 40-45; "The Double-Crib Barn in South Central Pa., Part Three," Pioneer America, Vol. 2 (January 1970), pp. 47-52; and "The Double-Crib Barn in South Central Pennsylvania, Part Four," Pioneer America, Vol. 2 (July 1970), pp. 23-34.

¹⁶Excellent descriptions of the various farm buildings associated with the Pennsylvania Germans are found in Amos Long, Jr., The Pennsylvania German Family Farm (Breinigsville, Pennsylvania: The Pennsylvania German Society, 1972).

¹⁷Glassie, "The Smaller Outbuildings of the Southern Mountains," op. cit., p. 23.

¹⁸Glassie, "The Pennsylvania Barn in the South, Part II," op. cit., p. 25. Two books devoted exclusively to the Pennsylvania barn are Charles E. Dornbush, Pennsylvania German Barns, Twenty-first

Although the great influence of the Pennsylvania Germans and lack of Fenno-Scandian influence had generally been accepted by scholars, several writers suggest that the Fenno-Scandian influence was in fact significant.¹⁹ The debate over the relative importance of Fenno-Scandian and German log construction was carried out largely without the benefit of detailed field observations in Europe. Writers for the most part relied on historical documents and field observation in the United States and examination of European documents. Recently, however, Terry G. Jordan examined areas of southern Central Europe and Scandinavia in an effort to shed light on the debate, and his findings have dramatically challenged some of the accepted beliefs about Midland American log architecture.²⁰

Yearbook of the Pennsylvania German Folklore Society (Allentown, Pennsylvania: Pennsylvania German Folklore Society, 1955); and Alfred L. Shoemaker, Editor, The Pennsylvania Barn (Lancaster, Pennsylvania: Pennsylvania Dutch Folklore Center, 1955). Of particular interest is a chapter in the latter work on log barns; see Henry J. Kauffman, "The Pennsylvania Log Barn," pp. 23-34.

¹⁹Mercer (op. cit., p. 30), writing in 1924, stated that the Swedes and Finns of the Delaware Valley were conquered and absorbed by the nearby English colonists, who began to build log houses in the late seventeenth century. He added that the English, in the eighteenth century, spread the Scandinavian tradition "along the entire western frontier." Weslager (op. cit., pp. 238-239), believed the American log house to be an acculturated form, "incorporating basic Scandinavian and German traits, with modifications by the Scotch-Irish and others, and . . . in time . . . it became utterly impossible to identify a log cabin during the post-pioneer period in nationalistic terms.

²⁰Terry G. Jordan, "Alpine, Alemannic, and American Log Architecture," Annals of the Association of American Geographers, Vol. 70 (1980), pp. 154-180; and "A Reappraisal of the Fenno-Scandian Antecedents for Midland American Log Construction," Geographical Review, Vol. 73 (1983), pp. 58-94.

Jordan initially examined the Alpine and Alemannic regions of southern Central Europe, including parts of southern Germany, Switzerland, Austria, eastern France and northern Italy.²¹ He discovered evidence of a significant Alpine influence on Midland American barn types, particularly the Pennsylvania forebay-bank barn and subtypes of the double-crib log barn. These findings are in sharp contrast to those of Glassie, who considers these barn types to be American developments.²²

Jordan subsequently sought to reassess the potential of Sweden and Finland as source areas for American log architecture.²³ Field observations convinced Jordan that certain construction elements and building types were introduced to America from Scandinavia. They include the V, square, half, and undersided saddle notchings; the corn crib; the single-crib barn; and the cantilevered smokehouse; two-sided planking; the dog-trot house; and the post-and-rail fence.²⁴ He believed the strongest Fenno-Scandian-Midland American association was for relatively primitive construction elements:²⁵

²¹Jordan, "Alpine, Alemannic, and American Log Architecture," op. cit., pp. 154-180.

²²Ibid., p. 179.

²³Jordan, "A Reappraisal of Fenno-Scandian Antecedents for Midland American Log Construction," op. cit., pp. 58-94.

²⁴Ibid., p. 93.

²⁵Ibid.

I argue that the log cabin with its round timbers, saddle or crude V notching, log gable, and gently pitched ridge pole-and-purlin roof covered with boards is largely Fenno-Scandian in antecedence, as are the more crudely constructed outbuildings.

Jordan contends that understanding Wilbur Zelinsky's "doctrine of first effective settlement" is important in explaining the role of Finns and Swedes in the development of American log construction. The doctrine holds that "the specific characteristics of the first group able to effect a viable, self-perpetuating society are of crucial significance for the later social and cultural geography of the area, no matter how tiny the initial band of settlers may have been."²⁶ Because Finns and Swedes carried out the first effective settlement of the lower Delaware Valley, the folk log buildings constructed by them were models for subsequent pioneer settlement in the Midland area. Therefore, although Scandinavian construction elements were crude, they were not replaced, but modified by more refined German construction techniques.²⁷

German contributions to the tradition of log construction that emerged were significant, however. According to Jordan, they include the introduction of the shingled roof, the Pennsylvania barn, the continental central chimney log house, board gables, tall

²⁶Ibid., p. 94. The "doctrine of first effective settlement" appears in Zelinsky, *op. cit.*, p. 13.

²⁷Jordan, "A Reappraisal of Fenno-Scandian Antecedents for Midland American Log Construction," *op. cit.*, p. 94.

thin planking, and the rafter roof. In addition, the Germans modified and refined Fenno-Scandian V notching, and reinforced the use of the dovetail notch, chinking, and the double-crib plan. The log cabin plan that became characteristic of the Midland area retained the Fenno-Scandian tradition. The system of log construction and architecture that emerged was syncretic, but at the same time elements characteristic of each ethnic group persisted after the pioneer stage.²⁸

The debate over the relative contributions of Fenno-Scandians and Germans to the development of American log architecture probably has not ended. Jordan's findings, based on field observations in Europe, have shown, however, that the Fenno-Scandian contribution was much greater than previously recognized.²⁹

II. DIFFUSION OF LOG CONSTRUCTION

Although much remains to be learned about the development of log architecture in the Midland core area, log construction was carried in several directions by emigrants from the Midland core area, but it did not effectively penetrate New England or the

²⁸Ibid.

²⁹Jordan has recently consolidated his evidence of European roots for Midland American log architecture in American Log Buildings: An Old World Heritage, op. cit.

Tidewater South.³⁰ In addition to its presence in Pennsylvania, southwestern New Jersey, and central and western Maryland, Midland log construction diffused great distances westward and southward. The carriers of the log tradition were initially Germans and Scotch-Irish, but they later were joined on the frontier by large numbers of westward-moving English, who also spread the tradition.³¹

The westward movement penetrated the southern parts of Ohio, Indiana, and Illinois and southern and central Missouri. The southern and southwestern movements carried log construction through West Virginia and Kentucky; western and piedmont Virginia, North Carolina and South Carolina; most of Georgia, Alabama, and Mississippi; all of Tennessee and Arkansas; and eastern Oklahoma and central and eastern Texas (Figure 3). Although the directions of the main flows of log construction were to the west, southwest, and south, a multitude of routes off the main flows proceeded in all directions.³²

³⁰The standard work on the subject of the diffusion of folk housing from eastern culture hearths is Fred Kniffen, "Folk Housing: Key to Diffusion," Annals of the Association of American Geographers, Vol. 55 (1965), pp. 549-577. Other discussions of the spread of Midland folk architecture are found in, for example, Peirce F. Lewis, "Common Houses, Cultural Spoor," Landscape, Vol. 19 (1975), pp. 1-22; and Glassie, Pattern in the Material Folk Culture of the Eastern United States, op. cit., pp. 36-64.

³¹Kniffen and Glassie, op. cit., pp. 58-65; Glassie, "The Appalachian Log Cabin," op. cit., p. 5; and Terry G. Jordan, Texas Log Buildings (Austin: University of Texas Press, 1978), pp. 23-25.

³²Jordan, Texas Log Buildings, op. cit., pp. 24-26.

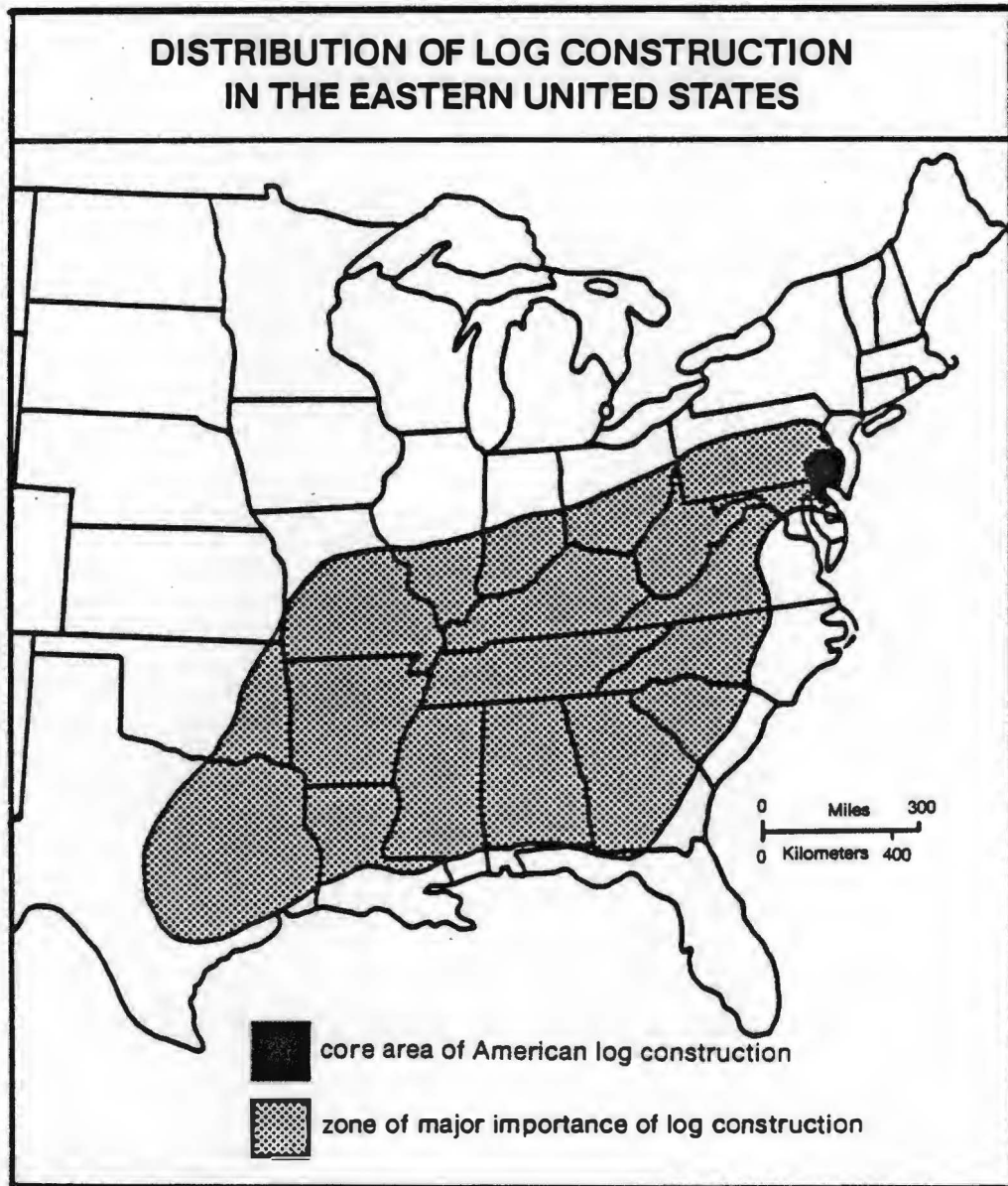


Figure 3. Distribution of log construction in the eastern United States.

Source: Modified from Jordan, Texas Log Buildings, op. cit., p. 26 and American Log Buildings: An Old World Heritage, op. cit., p. 8.

By the time log houses had spread relatively short distances from Pennsylvania, their form had become nearly uniform. The single-pen log house (one room unit) with exterior gable-end chimney became the syncretic dwelling, and was transported great distances to the west and south. Sometimes the house was enlarged by erecting a second log pen beside the first unit to form a double-pen structure.

The diffusion of log construction from southeastern Pennsylvania was not limited to log houses. Ideas about other buildings, particularly barns and outbuildings, were carried across the frontier as part of the cultural heritage of settling groups. Small rectangular outbuildings with cantilevered front gables became common throughout the Upland South, but log barn types varied considerably from area to area.³³

The most distinctive feature of horizontal log construction is the corner notch, a device which locks the logs in place. Because notch types tend to exhibit considerable spatial variation across the eastern United States, their distribution has been used to show patterns of the diffusion of log construction. Kniffen stated:³⁴

Different types of cornering were favored by different groups of American pioneers and there were changes with time and with the distance that they were carried from

³³Kniffen, "Folk Housing: Key to Diffusion," op. cit., pp. 549-577.

³⁴Fred Kniffen, "On Corner Timbering," Pioneer America, Vol. 1 (1969), p. 1.

the point of introduction. When plotted on maps, the different types show directions of diffusion or spread.

Three notch types, the V, saddle, and full-dovetail notches, were common in southeastern Pennsylvania (Figure 2, page 19). The V was the dominant notch type in the area and was used especially to erect houses and more substantial barns and outbuildings. The full-dovetail notch was employed to a lesser extent but for the same purposes as the V notch. The saddle notch was used primarily to construct lower quality barns and outbuildings. All three notches were carried by the Germans and Scotch-Irish into central Maryland and the northern Shenandoah Valley, beginning about 1732. The V notch, however, became the dominant type carried from the Shenandoah Valley eastward into the Blue Ridge Mountains and southward into the Valley of Virginia. The V notch continued to dominate further south through the Valley of Southwest Virginia to at least the Tennessee border.³⁵

East of the Blue Ridge in Virginia, English settlers adopted Midland log construction, but developed or employed a variety of notch types, including square, saddle, and half-dovetail, and to a lesser degree half, diamond, and full-dovetail notches (Figure 2). The half-dovetail notch dominates in western North Carolina, from where it was carried westward into Tennessee.³⁶

³⁵Kniffen and Glassie, *op. cit.*, pp. 58-59.

³⁶*Ibid.*, p. 63; Glassie, "The Appalachian Log Cabin," *op. cit.*, pp. 10-11; Mary Ann Gusler, "Folk Housing in Patrick County, Virginia," unpublished Master's thesis, Arizona State University, 1973, pp. 52-74.

All three common Midland notches, V, saddle, and full-dovetail, spread from Pennsylvania down the western Appalachian valleys, and all are found in the Alleghenies along the northern section of the West Virginia-Virginia border. In this area, however, the half-dovetail notch is commonly used, and becomes dominant farther south in West Virginia, eastern Kentucky, and southwestern Virginia. Many barns and outbuildings in those areas are saddle notched.³⁷

The two Appalachian flows, one moving through the Valley of Virginia and the other through the Alleghenies, merged in the area of southwestern Virginia, northwestern North Carolina, and upper East Tennessee. In this area, saddle, V, and half-dovetail notches all commonly appear, though saddle notches are found mainly on barns and outbuildings.³⁸

Patterns of corner notches in East Tennessee result largely from southward diffusion of V, saddle, and half-dovetail notches from Virginia and westward diffusion of half-dovetail and square notches from North Carolina. Those patterns will be discussed in detail in Chapter III. It is apparent that Tennessee's log tradition, which dominated the early landscape and remained important in some areas through the nineteenth century, is largely the product of cultural diffusion from the Midland culture area.

³⁷Kniffen and Glassie, *op. cit.*, p. 63.

³⁸*Ibid.*

Although groups of emigrants were leaving the Midland core area for the Upland South as early as 1730, most of the area was occupied by settlers during just 50 years, ca. 1775-1825.³⁹ John Solomon Otto and Nain Estelle Anderson attributed the rapid conquest of the vast hardwood and pine forests of the Upland South to the utilization by settlers of a woods-lands-adapted agricultural economy, in which forest lands were substituted for scarce labor and capital. Forest lands were devoted to open-range herding and a fallow-oriented system of extensive farming.⁴⁰

According to Newton, the Upland Southerners were able to settle a one million square mile area of wilderness in such a short period of time because they possessed certain pre-adaptive traits, acquired during the 1725-1775 period in the backcountry hearth extending from Lancaster, Pennsylvania, to Augusta, Georgia. The pre-adaptive traits included a dispersed settlement pattern, "which allowed fewer persons to claim more territory"; a stockman-farmer-hunter economy, with a "productive and adaptive food-and-feed complex" and great "adaptability" with regard to their commercial crop"; and knowledge and skill of log construction, "which permitted exploitation of vast forest resources." ⁴¹

³⁹Newton, op. cit., p. 149.

⁴⁰John Solomon Otto and Nain Estelle Anderson, "The Diffusion of Upland South Folk Culture, 1790-1840," Southeastern Geographer, Vol. 22 (1982), pp. 89-98.

⁴¹Newton, op. cit., pp. 152-153.

III. DOMINANCE OF LOG CONSTRUCTION

Log construction was the accepted practice in the Upland South during the frontier period, and, in many parts of the area, it was common during most of the nineteenth century. Travelers reported the presence of log buildings over broad areas during the late eighteenth and early nineteenth centuries. Gilbert Imlay described house construction on the Kentucky frontier during the 1790s:⁴²

As the country gained strength, the stations began to break up in that part of the country, and their inhabitants to spread themselves, and settle upon their respective estates. But the embarrassment they were in for most of the conveniences of life, did not admit of their building any other houses but of logs . . . A house of this sort may be made as comfortable and elegant as any other kind of building; and is therefore the most convenient, as it may be erected in such a manner as to answer the circumstances of all descriptions of persons.

Thomas Chapman observed many log houses in Kentucky and Virginia in 1795-1796.⁴³

The Frenchman F. A. Michaux traveled extensively in the eastern United States during 1802 and reported the presence of large numbers of log houses in Pennsylvania, Ohio, Kentucky, Tennessee,

⁴²Gilbert Imlay, A Topographical Description of the Western Territory of North America (London: F. Debrett, 1797, Third Edition), p. 166.

⁴³Thomas Chapman, "Journal of a journey through the United States, 1795-1796, from the original manuscript . . .," Historical Magazine and Notes and Queries, Vol. 15 (June 1869), pp. 357-368; reprinted in Eugene L. Schwab, Editor, Travels in the Old South (Lexington: University of Kentucky Press, Vol. I, 1973), pp. 23-42.

the Carolinas, and Georgia. In commenting on the upper Carolinas, Michaux stated:⁴⁴

Eight-tenths of the inhabitants of this part of the country are in the same situation as those of Tennessee [sic] and Kentucky. They reside, like the latter, in log-houses isolated in the woods, which are left open in the night as well as the day.

Frame and brick houses were erected quite early in towns on the frontier, but log dwellings comprised a significant portion of all houses in smaller nucleated settlements, especially during their early development. Michaux described Knoxville, Tennessee, in 1802 as being comprised of about two hundred houses, "chiefly built of wood," but nearby Kingston was described as consisting of thirty or forty log houses.⁴⁵ In Greeneville he observed about forty houses, "constructed with square beams something like the log houses," but saw only houses built of wood in Jonesboro.⁴⁶ Michaux observed that Paris, Kentucky, a "manor-house for the county of Bourbon," contained more than a hundred and fifty houses, "half of which are brick."⁴⁷ He noted that brick houses comprised most of those in Lexington, described as the wealthiest town in the three new western states. In contrast, Gallipolis, Ohio, located

⁴⁴F. A. Michaux, Travels to the West of the Allegheny Mountains (London: B. Crosby and Co. and J. P. Hughes, 1805); reprinted in Reuben Gold Thwaites, Editor, Early Western Travels, 1748-1846, Vol. III (Cleveland: The Arthur Clark Company, 1904), pp. 105-306; quote, p. 300.

⁴⁵Michaux, op. cit., pp. 265-266.

⁴⁶Ibid., p. 270.

⁴⁷Ibid., pp. 198-199.

along the Ohio River, was reported to consist "solely of about sixty log-houses," and nearby Alexandria, Ohio, had about twenty houses, mostly log structures.⁴⁸

Although the proportion of log dwellings in towns decreased through time, they did not quickly disappear from the landscape or lose their identity through modification. In Middle Tennessee towns, for example, log dwellings were observed during the 1830s. Eastin Morris described Gallatin as a town with "thirty-five log, thirty-eight frame, and twenty-seven brick houses, on the first day of June 1830," and, according to James Patrick, Nashville still had 21 log houses in 1831.⁴⁹ Relatively few log structures, however, are believed to have been constructed in towns of the South after the 1830s.

Log buildings continued to be erected in the rural South for several decades after the demise of log construction in towns and villages. Frederick Law Olmsted provides evidence that the log house was still a very common feature in several parts of the South during the 1850s.⁵⁰ In his travels he observed "poor whites" in

⁴⁸Ibid., pp. 184, 186.

⁴⁹Eastin Morris, The Tennessee Gazeteer (Nashville: W. Hasell Hunt and Co., 1834), p. 59; and James Patrick, Architecture in Tennessee 1768-1897 (Knoxville: University of Tennessee Press, 1981), p. 17.

⁵⁰Frederick Law Olmsted, A Journey in the Back Country (New York: Burt Franklin, 1970, reprint of 1860 publication), pp. 196-200, 205, 208, 220, 230-231, 233-237, 244, 257-258, 262, 267, 276-278.

central Mississippi and the northern Alabama hill country living in log houses. His description of the dwellings of non-cotton farmers of the hill country shows the dominance of the log house over the frame house:⁵¹

The larger number of the dwellings are rude log huts, of only one room, and that unwholesomely crowded. I saw in and about one of them, not more than fifteen feet square, five grown persons, and as many children. Occasionally, however, the monotony of these huts is agreeably varied by neat, white, frame houses . . . I passed the night at the second framed house that I saw during the day.

Olmsted also found the non-slaveholding cotton farmers of northern Alabama living in similar structures:⁵²

The country continues hilly, and is well populated by farmers, living in log huts, while every mile or two on the more level and fertile land, there is a larger farm, with ten or twenty negroes at work.

The area along the border of southeastern Tennessee and northeastern Alabama was also dominated by log dwellings, but of a different type:⁵³

The great majority live in small and comfortless log huts, two detached cabins usually forming the habitation of a family.

Olmsted also referred to the presence of log dwellings in East Tennessee, western North Carolina, and southwestern Virginia.

In the summer of 1865, John Richard Dennett traveled to the South to report on its post-Civil War conditions for The Nation,

⁵¹ Ibid., pp. 205-206.

⁵² Ibid., p. 208.

⁵³ Ibid., p. 230.

a magazine published in New York.⁵⁴ His observations reveal the presence of many log houses in the Piedmont of southern Virginia and the Carolinas. His description of houses around Danville, Virginia, revealed the dominance of the log house in that area, but also indicates the presence of two other classes of houses:⁵⁵

During all these days the dwellings which I have passed have been such as described in a previous letter; at rare intervals one sees the mansion-house with pretensions to elegance and comfort, the log-cabin plastered with mud occurs very frequently, and somewhat less often is seen the ordinary farm-house.

In the "sandy pine country" of North Carolina, along the Cape Fear River, about 50 miles north of Fayetteville, Dennett found the houses to be "seldom more than a log hut." He had a similar description of the houses in the poor, sparsely settled Congaree River area of South Carolina.⁵⁶ Dennett did not always find log houses to be mere "huts" of the poor. Occasionally he encountered the "better" class living in log dwellings. One example was near Marion, South Carolina:⁵⁷

This man owned a farm of more than two hundred acres, he lived in a very neat log-house, with a trim yard around it, his outhouses and fences were regularly disposed and in good order, nine or ten books were on the mantelpiece,

⁵⁴Henry M. Christman, "Introduction," in John Richard Dennett, The South As It Is: 1865-1866 (New York: The Viking Press, 1965), pp. v-xi.

⁵⁵Dennett, op. cit., p. 95.

⁵⁶Ibid., pp. 166, 243.

⁵⁷Ibid., p. 185.

and his surroundings generally, as well as his manners and conversation, showed him to be a good deal above that class commonly called "low-down, triflin' people," or poor white trash.

The writings of Scotsman Robert Somers indicate that the log house was still the dominant dwelling type among cotton planters in the Tennessee River Valley of Alabama in 1870-71.⁵⁸ His description of the typical houses and farmsteads of that area portray the log house more favorably than did some earlier writers:⁵⁹

Save in the vicinity of towns, where the planters sometimes build houses and ride out to their plantations, or some famous old homesteads in the country where the wealth of a former generation has erected mansions and offices more in style of the rural gentry than of the farmers of England, the planters for the most part live in plain log-houses, with a wide open hall running through the middle of it from a verandah in the front to a dining apartment and kitchen in the rear. . . . The dwelling-houses besides having more or less well-chosen sites, are usually surrounded by a spacious courtyard, snake-fenced on its four sides, with stable for saddle and buggy horses, smoke-house, cotton-shed, corn-cribs, and uncovered pens for feeding milch cows . . . ranged round the exterior of the yard. . . . Cabins for the negro domestic servants and other right-hand persons about the planter are also put up near the homestead, so that . . . the log-house becomes the centre of a considerable establishment.

After traveling to Nashville and northward to Louisville, Somers commented that regional variations in housing were discernible at that time in the Upland South. He found the houses on farms north of Nashville and in Kentucky to be more substantial than those of

⁵⁸Robert Somers, The Southern States Since the War 1870-71 (University, Alabama: University of Alabama Press, 1965, reprint of 1871 edition), pp. 118-119.

⁵⁹Ibid.

the cotton plantations. It is likely that the substantial houses observed by Somers in Middle Tennessee and Kentucky were not log houses.⁶⁰

It is clear that the log house was a common feature in the Upland South after the Civil War, but areal variations of types of construction and historical patterns of persistence and decline of log construction within areas are not well understood. It is known, however, that log houses did persist and were still being built in the early twentieth century in some of the more isolated areas of the Southern mountains.

Horace Kephart, for example, reported only two or three frame houses among the 42 houses in the Hazel Creek Valley of mountainous western North Carolina in 1904.⁶¹ The writings of John C. Campbell indicate that log houses were common in the southern highlands during the early 1900s, and Mandel Sherman and Thomas R. Henry found "hollow folk" of the Blue Ridge Mountains living in log dwellings in the late 1920s.⁶²

⁶⁰Ibid., p. 275.

⁶¹Horace Kephart, Our Southern Highlanders (Knoxville: University of Tennessee Press, 1976; reprint of 1922 edition, originally published in 1913), pp. 30-31.

⁶²John C. Campbell, The Southern Highlander and His Homeland (Lexington: University of Kentucky Press, 1969; reprint of 1921 edition), pp. 82-83, for example; Mandel Sherman and Thomas R. Henry, Hollow Folk (New York: Thomas Y. Crowell, 1933), pp. 1, 5.

IV. THE TRADITION OF LOG CONSTRUCTION IN TENNESSEE

Log construction in Tennessee paralleled the situation in the Upland South, playing a significant role in the conquest of the Tennessee frontier. In addition to houses, barns, and farm out-buildings, many other buildings, such as forts, courthouses, jails, hotels, taverns, stores, churches, schools, grist mills and blacksmith shops, were built of logs during the frontier era. Decades after the end of the frontier period, large numbers of log structures, especially houses, barns, smokehouses, and corn cribs, continued to be erected in the state, and were the dominant types in some areas.⁶³

⁶³Evidence for the importance of eighteenth and nineteenth century log buildings in various areas of Tennessee is found in various sources, including Harriette Simpson Arnow, Seedtime on the Cumberland (New York: The Macmillan Company, 1960), pp. 247-281; James A. Crutchfield, "Pioneer Architecture in Tennessee," Tennessee Historical Quarterly, Vol. 35 (1976), pp. 162-174; Thomas Hughes, Rugby Tennessee (London: Macmillan and Company, 1881), pp. 63, 70; J. B. Killebrew, Introduction to the Resources of Tennessee (Nashville, Tennessee: Tavel, Eastman and Howell, 1874), pp. 438, 459, 551-552, 773; John Morgan, "An Examination of Log Dwellings in a Cumberland Plateau County in East Tennessee," Proceedings of Conference on Appalachian Geography (Athens, West Virginia: Geography Department, Concord College, 1982), pp. 113-125; John Morgan and Joy Medford, "Log Houses in Grainger County, Tennessee," Tennessee Anthropologist, Vol. 5 (1980), pp. 137-158; John Morgan and Ashby Lynch, Jr., "The Log Barns of Blount County, Tennessee," Tennessee Anthropologist, Vol. 9 (1984), pp. 85-103; James Patrick, Architecture in Tennessee, 1768-1897 (Knoxville: University of Tennessee Press, 1981), pp. 16-17; John B. Rehder, John Morgan, and Joy L. Medford, "The Decline of Smokehouses in Grainger County, Tennessee," in James R. O'Malley, Editor, The Southeastern United States: Essays on the Cultural and Historical Landscape, Studies in the Social Sciences, Vol. 18 (Carrollton, Georgia: West Georgia College, 1979), pp. 75-83; Edna Scofield, "The Evolution and Development of Tennessee Houses," Journal of The Tennessee Academy of Science,

After the Civil War log buildings remained important landscape features in Tennessee, particularly in some sections of the state. J. B. Killebrew's Introduction to the Resources of Tennessee provides evidence of the persistence of log buildings in various areas of the state in the 1870s.⁶⁴ In fact, the farm houses of East Tennessee are characterized as generally being of log construction.⁶⁵ Some of the county reports of Killebrew also mention individual counties with log houses as the dominant construction type. Bledsoe County houses are described as being "The primitive style . . . mostly log," and the typical farm residences of Knox County were also log buildings.⁶⁶

Killebrew also reported on the prevalence of log barns and outbuildings in some areas. For example, in the knobby region of Knox County the outbuildings, if present, were "of logs or polls [sic], and rarely consist of anything beyond a corn-crib and stable."⁶⁷

Log buildings were not restricted to East Tennessee in the 1870s. Killebrew gave a detailed account of construction types in

Vol. 11 (1936), pp. 229-240; Norbert F. Riedl, Donald B. Ball, and Anthony P. Cavender, A Survey of Traditional Architecture and Related Material Folk Culture Patterns in the Normandy Reservoir, Coffee County, Tennessee (Knoxville, Tennessee: The Tennessee Valley Authority, 1976), pp. 15-77.

⁶⁴Killebrew, op. cit., pp. 438, 459, 551-552, 773.

⁶⁵Ibid., p. 438.

⁶⁶Ibid., pp. 459, 551-552, 557.

⁶⁷Ibid., p. 552.

Humphries County in Middle Tennessee for 1872. Of 1930 houses surveyed, 1380 (72 percent) were of log construction. Log barns and stables were even more dominant, with 96 percent of barns and 92 percent of stables being log.⁶⁸

Contemporary observers indicate that in the early 1880s the log house was still the typical residence in Sevier and Blount counties in East Tennessee and on the Cumberland Plateau.⁶⁹ The barns and cribs in Blount and Sevier counties were also built of logs during that period.⁷⁰

As is the case with larger Upland South region, it is difficult to be specific about the decline of log construction in Tennessee. In some areas log construction may have declined soon after the Civil War, but in other areas log construction persisted into the present century. For example, Arnow reported that "in remoter regions of the Highland Rim" of Middle Tennessee log construction persisted until the 1930s.⁷¹

An agricultural and industrial survey conducted by the Tennessee Valley Authority in 1934 showed nearly 14 percent of the

⁶⁸Ibid., p. 773.

⁶⁹Thomas I. Saunders, "Letter from East Tennessee," The United Presbyterian, March 25, 1880, p. 202; Hughes, op. cit.

⁷⁰Saunders, op. cit., p. 202.

⁷¹Arnow, op. cit., p. 275.

houses in rural Grainger County, in East Tennessee, to be of log construction.⁷² A farm housing survey of nine selected Tennessee counties revealed that a significant proportion of rural residents still lived in log houses in 1939. In Middle Tennessee, Montgomery and White counties were reported to have 15.4 percent and 14.9 percent of their farm houses constructed of logs. In East Tennessee, the percentage of log dwellings in Sevier County was 11.9 percent of the total number houses sampled. For the seven other counties inventoried, percentages of log houses ranged from 1.9 percent in Obion County, in West Tennessee, to 9.7 percent for Maury County, in Middle Tennessee.⁷³ The survey failed to indicate if log houses were still being constructed in the counties inventoried.

The writer suspects that the percentage of log houses in Tennessee in the 1930s was even higher than reported in the surveys. It is likely that some isolated and/or abandoned log houses were omitted or not sampled, and it is probable that some sided log dwellings were mistakenly reported to be frame structures.

Recent historic building surveys of eight East Tennessee counties have revealed that large numbers of log buildings,

⁷²The Tennessee Valley Authority, *Agricultural and Industrial Survey of Grainger County, Tennessee* (Knoxville: The Tennessee Valley Authority, 1934).

⁷³"The Farm Housing Survey," United States Department of Agriculture Miscellaneous Publication No. 323, 1939, Table 2.

especially houses, remain on the landscape.⁷⁴ More than eight hundred log houses were identified in Blount, Grainger, Union, Morgan, Hamblen, Jefferson, Meigs, and Unicoi counties, and more than seven hundred log structures (houses and other buildings) were identified in Blount and Grainger counties alone. Although the number of log structures is dwindling rapidly, evidence still exists for the documentation of a rich tradition of log construction in the state.

⁷⁴The building surveys are on file at the Tennessee Historical Commission, Nashville.

CHAPTER III

THE LOG HOUSES OF EAST TENNESSEE

I. INTRODUCTION

Although the number of log houses on the East Tennessee landscape has dwindled greatly during the last several years, a sufficient number remain to permit one to accurately describe their basic characteristics. As background for the subsequent sections of the dissertation, this chapter will describe the form and construction characteristics of existing log dwellings and comment on their current status.

II. SINGLE-PEN LOG HOUSES

Based on a three county survey, 85 percent of extant log dwellings in East Tennessee are single-pen structures, which Henry Glassie described as "the typical house of all settlers from Maryland to Alabama."¹ A single-pen consists of one room with four log walls (Figure 4). The single-pen log house characteristically had side-facing gables, an exterior gable-end chimney, and a roof ridge parallel to the front of the structure (Figure 5).

¹Historic buildings surveys of Blount, Grainger, and Morgan Counties, Tennessee, on file at the Tennessee Historical Commission, Nashville; Henry Glassie, "The Appalachian Log Cabin," Mountain Life and Work, Vol. 39 (1963), p. 8.



Figure 4. Typical log single-pen unit (Grainger County, Tennessee, 1978).



Figure 5. Typical one-and-a-half-story single-pen log house with exterior gable-end chimney (Grainger County, 1979).

Approximately 65 percent of the single-pen houses examined in East Tennessee are one-and-a-half-story structures, whereas about 25 percent are one-story and about 10 percent are two-story structures (Figures 5-7). The log dwellings typically were built one to two feet above ground on stone piers or a solid stone foundation, were crafted from hand-hewn timbers eight to twenty inches in diameter, and had wooden floors. The spaces between the logs were usually chinked with small pieces of wood and daubed with mud or mortar (Figure 8).

A chimney was constructed on the gable end of nearly all the single-pen log structures. Chimneys typically were of stone or brick, but a few "stick-and-mud" chimneys have been recorded (Figures 5 and 9). The structures commonly have front and rear doors, usually placed in or near the center of the walls. No windowless houses have been observed, but several have only one, either in the front or gable end of the building. Most houses have two or more windows, although some were added since original construction. One-and-a-half-story houses often have loft windows in the gable, and occasionally have small upper windows in the front of the house. Two-story houses usually have both front and side second-floor windows, but sometimes the end opposite the chimney has no window.

Front porches were added to a majority of the log houses and some of the structures have rear porches. Nearly all the log houses



Figure 6. Sided one-story single-pen log house (Morgan County, Tennessee, 1980).



Figure 7. Two-story single-pen log house (Grainger County, 1981).



Figure 8. Log wall showing size of logs, hewing, and chinking between logs (Blount County, Tennessee, 1983).

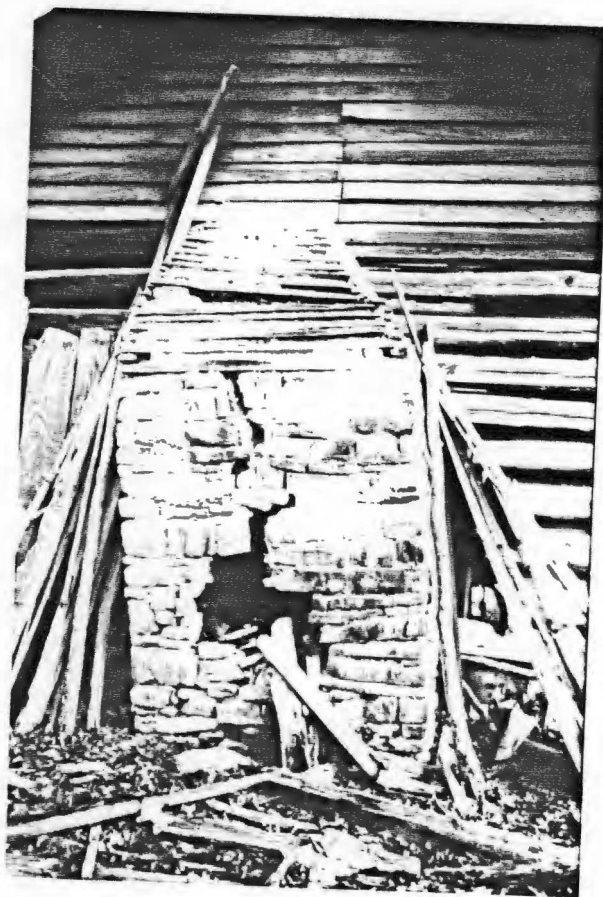


Figure 9. "Stick-and-mud" chimney (Blount County, 1984).

now have metal roofs, but the original roofs were usually covered with wooden boards or shingles (Figure 10). On several of the log houses the roof was extended two to four feet on the chimney side to protect the chimney from the elements.

Most of the single-pen log houses have been sided and at least 85 percent have been enlarged with frame additions. Approximately 75 percent of the extant log dwellings have rear additions, of which about half are gable-roofed ell additions and half are shed additions. Nearly half the single-pen units have end or side frame additions, many of which are gable-roofed extensions of the main structure.

Two basic types of single-pen log houses have been identified in the Upland South: the rectangular pen and the square pen.³ The rectangular single-pen log house was introduced in this country by the Swedes or Scotch-Irish of the Middle Atlantic colonies, whereas the square log house is an English product, a descendent of the 16 feet square British one-bay house.⁴

Log structures with the front and rear walls at least five feet longer than the side walls are usually considered rectangular.

³Henry Glassie, "Types of the Southern Mountain Cabin," in Jan H. Brunvand, Editor, The Study of American Folklore (New York: W. W. Norton, 1968), pp. 338-370; Terry G. Jordan, Texas Log Buildings (Austin: University of Texas Press, 1978), pp. 108-111.

⁴Ibid., Terry G. Jordan, American Log Buildings: An Old World Heritage (Chapel Hill: University of North Carolina Press, 1985), 149, 153.



Figure 10. Single-pen log house with original board roof (Grainger County, 1980).

Glassie found that the rectangular pens of the Southern mountains were always 20 feet or more in length.⁵ Those with front and rear dimensions less than five feet longer than the side dimensions are generally classified as square. The square pen is normally about 16 feet square and the dimensions are almost always within two or three feet of being equal.⁶

Thirty-nine percent (12 of 31) of Morgan County log houses measured, and 31 percent (17 of 54) of those measured in Grainger County, can be considered rectangular based on the classification of Glassie and Jordan. Morgan County rectangular structures range in size from 20 by 14 feet to 30 by 17 feet, whereas those in Grainger County range from 20 by 15 feet to 29 by 21 feet. The most commonly observed dimensions were roughly 25 by 17 feet, 24 by 16 feet, and 20 by 15 feet in Morgan County, and 22 by 16 feet, 24 by 18 feet, and 26 by 20 feet in Grainger County.

Sixty-nine percent (37 of 54) Grainger County log dwellings and 61 percent (19 of 31) of Morgan County structures have front and rear walls less than five feet longer than side walls. The dimensions of the structures range from 16 feet square to 24 feet by 22 feet in Grainger County, with those in Morgan County ranging from 16 feet square to 23 by 20 feet. Unlike the square pens observed by Glassie

⁵Glassie, *op. cit.*

⁶Ibid.; Jordan, Texas Log Buildings, *op. cit.*, pp. 108-111.

in the Southern mountains and Jordan in Texas, few of those in Grainger or Morgan counties are 16 feet square. In fact, only seven of 19 (37 percent) in Morgan County and seven of 37 (19 percent) in Grainger County are less than 20 feet in length. Thirteen (35 percent) of the square houses in Grainger and seven (37 percent) of those in Morgan have front and rear dimensions which, in contrast to the findings of Glassie and Jordan, are between three and a half and four feet longer than the side dimensions. Only four of the Grainger County log pens and three of those of Morgan County have front and rear dimensions less than two feet longer than side dimensions. Frequently occurring Grainger County square pens are approximately 20 by 18 feet, 20 by 17 feet, and 20 by 16 feet, whereas those common in Morgan County measure 22 by 18 feet, 21 by 18 feet, 21 by 17 feet, 20 by 17 feet, and 19 by 17 feet.

Dimensions for many single-pen log houses in Grainger and Morgan counties do not fit precisely into the rectangular and square pen classification of Glassie and Jordan, but represent a range of dimensions between those of the rectangular and square pen categories. The form of these log pens is further evidence of the fusion of types of log architecture in the Upland South.

III. DOUBLE-PEN LOG HOUSES

A significant number of double-pen houses were built in nineteenth century East Tennessee, and 51 were identified during

surveys conducted in Grainger, Blount, Morgan, and Union counties. Although occasionally both pens were constructed simultaneously, double-pen log houses usually were built in stages.

Single-pen log houses in the Upland South were typically enlarged by one of three methods.⁷ The addition of a second pen to the chimney end of a single-pen structure resulted in a central chimney "saddlebag" house (Figure 11). Twenty-three saddlebag log houses were identified in four county surveys. A second method of enlargement consisted of building a pen that abutted the gable end opposite the chimney of the original pen. Such a structure is referred to as a basic double-pen house, and twelve such houses have been located in the four counties (Figure 12).⁸ The third method of enlargement also consisted of construction of a second pen adjacent to the gable end opposite the chimney of the original pen. In this method, however, an open passageway or "trot" was left between the two pens. This type of double-pen dwelling is referred to as a "dogtrot" house. Sixteen log dogtrot houses have been identified in Grainger, Blount, Morgan and Union counties (Figure 13).

Various writers have referred to the log dogtrot house as a dominant type throughout Tennessee. Edna Scofield, for example, stated in 1936 that "The socalled 'double-pen' log house with the

⁷James R. O'Malley and John B. Rehder, "The Two-Story Log House in the Upland South," Journal of Popular Culture, Vol. 11 (1978), pp. 904-915.

⁸Jordan, Texas Log Buildings, op. cit., pp. 113-116.



Figure 11. Central chimney or "saddlebag" double-pen log house (Union County, Tennessee, 1980).



Figure 12. Basic double-pen log house (Grainger County, 1980).



Figure 13. Dogtrot double-pen house (Jackson County, Alabama, 1978).

open hallway between the two pens is the basis of a large percentage of all house types in Tennessee."⁹ Recently, James A. Crutchfield, writing about pioneer architecture in Tennessee, asserted that "The dogtrot cabin gained acceptance rapidly, and its popularity spread throughout Tennessee and the rest of the region."¹⁰ Although the dogtrot house is common in some parts of Tennessee, especially the southeastern and central parts of the state, it certainly was not the dominant house type in nineteenth century East Tennessee.¹¹ Moreover, on the basis of the four county surveys mentioned above, the saddlebag, and not the dogtrot, is the most common type of double-pen house in East Tennessee.

IV. NUMBER OF STORIES

The number of stories in East Tennessee log houses tends to vary temporally. The one-and-a-half-story unit dominated from the days of earliest settlement until the late 1800s. The proportion of one-story log houses constructed in the area increased through time, and nearly all the log structures erected during this century have

⁹Edna Scofield, "The Evolution and Development of Tennessee Houses," Journal of the Tennessee Academy of Science, Vol. 11 (1936), p. 232.

¹⁰James A. Crutchfield, "Pioneer Achitecture in Tennessee," Tennessee Historical Quarterly, Vol. 35 (1976), p. 173.

¹¹Fred Kniffen, "Folk Housing: Key to Diffusion," Annals of the Association of American Geographers, Vol. 55 (1965), p. 56; Henry Glassie, Pattern in the Material Folk Culture of the Eastern United States (Philadelphia: University of Pennsylvania Press, 1968), pp. 88-89; and Richard H. Hulan, "Middle Tennessee and the Dogtrot House," Pioneer America, Vol. 7 (1975), pp. 37-46.

been one-story units. Two-story log dwellings were commonly constructed in East Tennessee before 1860, but few have been built since that time, and none is known to have been built since 1880.

There was an apparent relationship between affluence of owner and number of stories in a log house. During the period in which the log house was the dominant dwelling type, most farmers lived in one-and-a-half-story structures, two-story log houses were built by the affluent, and one-story log structures were occupied by relatively poor people. After the Civil War few two-story log houses were built in part because affluent farmers constructed frame houses. By the time the one-story house became the most common log dwelling in the late 1800s, only poor people were building log houses.

V. TIMBER SELECTION

A myriad of tree species produce timber acceptable for use in log house construction, but in East Tennessee the great majority of builders used pine, poplar, or oak logs. Pine is the dominant wood type found in houses in Blount, Grainger, and Morgan counties, but poplar is the most common type found on Union County houses. The extent to which pine was used varied significantly, with 64 percent of the houses in Blount County being of pine whereas only 27 percent of those in Union were constructed of pine wood. Half the houses in Morgan and 40 percent of those in Grainger were built of pine.

Poplar use varied greatly among the four counties. It is found on 42 percent of the Union County log houses, and on 23 percent of those in Grainger and Morgan counties, but appears as the principal type on only 6 percent of Blount County log dwellings.

Distribution of oak log houses does not vary as greatly as those of pine and poplar. Grainger County has 17 percent of its houses built of oak; whereas Union has 12 percent; Blount, 11 percent; and Morgan; 9 percent. Mixed timbers show little variation, with each county having between 18 and 20 percent of its houses exhibiting more than one wood type.

The areal variation of wood types in log houses appears to reflect variations in the historical distribution of certain timber species, especially pine and poplar. In Grainger County, for example, the great majority of the houses north of Clinch Mountain are built of poplar logs, whereas those on the south side of the mountain are generally of pine construction. Union County, bordering on northwestern Grainger County, also is dominated by poplar log houses. In Blount County, the few poplar log houses are found in or adjacent to the eastern mountainous areas of the county. Both pine and poplar must have been acceptable to the log house builder in all four of the counties. The variation in distribution of species, however, limited the choices of house builders in some areas.

VI. PATTERNS OF CORNER NOTCHES

The connection of log walls to each other is made possible by the use of corner notches, which lock the logs securely in place. Several types of notches are common in the Eastern United States, and four of them are found in East Tennessee.¹² Data on corner notches for eight counties indicate that the half-dovetail notch is the dominant type found on East Tennessee log houses (Figure 14). In seven counties, Unicoi, Morgan, Meigs, Jefferson, Grainger, Union, and Blount, more than half the houses were erected with half-dovetail corners. The percentages of half-dovetail notches range from 58 percent in Blount County to a high of 88 percent in Unicoi County. Only Hamblen County, where 58 percent of the houses were joined at the corners with V notches, was not dominated by the half-dovetail notch (42 percent).

The V notch is the second most important type in East Tennessee. In addition to being the most common type in Hamblen County, where 58 percent of the houses were V-notched, the V notch is also common on houses in Grainger (27 percent), Blount (24 percent), Meigs (17 percent), and Union (12 percent) (Figure 15). Other notch types to appear on significant numbers of log houses are the

¹²For a discussion of notching techniques, see Fred Kniffen, "On Corner Timbering," Pioneer America, Vol. 1 (1969), pp. 1-8; and Fred Kniffen and Henry Glassie, "Building in Wood in the Eastern United States: A Time-Place Perspective," Geographical Review, Vol. 56 (1966), pp. 48-57. In the same article, pp. 58-65, Kniffen and Glassie discuss the distribution and development of corner-timbering in the Eastern United States.



Figure 14. Half-dovetail notch (Grainger County, 1979).

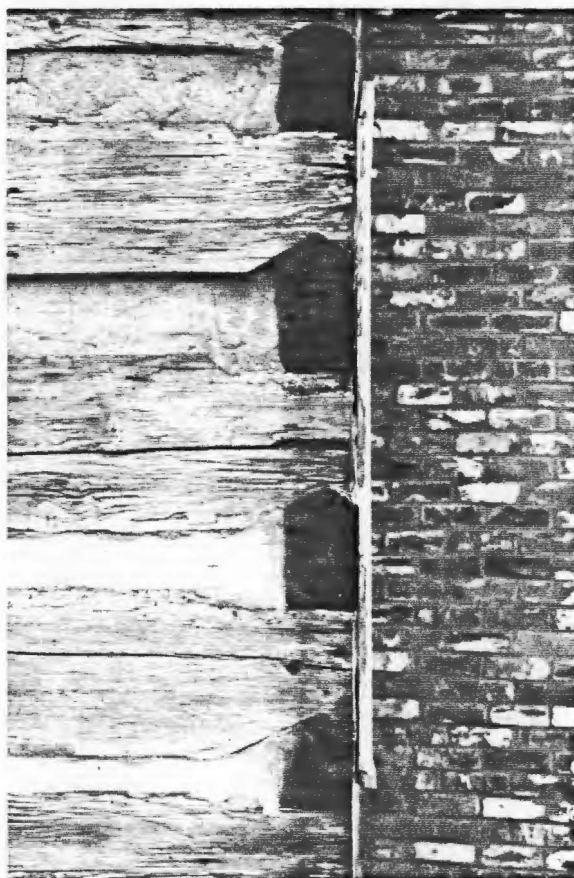


Figure 15. V notch (Blount County, 1984).

saddle notch in Morgan County (22 percent) and the square notch in Blount County (10 percent) (Figures 16 and 17).

Several scholars have discussed factors responsible for selection of corner notch types. Kniffen believes that "cultural tradition" is the determining factor in the selection of notch type.¹³ Jordan, although recognizing the influence of ethnicity on geographical patterns of notch types, asserted that notch type tends to vary with timber type in Texas. He stated that, "In general, we can say that dovetailing predominated for hardwoods, while saddle, "V", square, and semilunate notchings are prevalent in softwoods."¹⁴ Newton and Pulliam-DiNapoli, however, found that in Louisiana, "Notch types did not even change according to timber."¹⁵

Examination of data on timber and notch types for four counties reveals no evidence that timber type is the most important factor in selection of notch type in East Tennessee. The proportion of notch types associated with individual wood types generally parallels the ratio of individual notch types to the total number of houses with notched logs. For example, half-dovetail, the most

¹³Fred Kniffen, Book Review of Texas Log Buildings by Terry G. Jordan, Annals of the Association of American Geographers, Vol. 69 (1979), p. 331.

¹⁴Jordan, Texas Log Buildings, op. cit., p. 76.

¹⁵Milton B. Newton, Jr., and Linda Pulliam-DiNapoli, "Log Houses as Public Occasions: A Historical Theory," Annals of the Association of American Geographers, Vol. 67 (1977), p. 373.

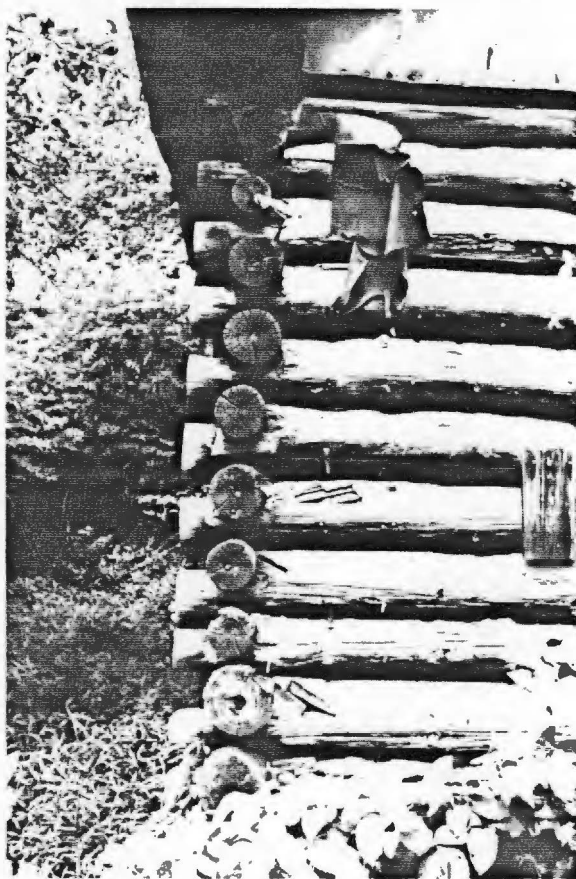


Figure 16. Saddle notch (Morgan County, 1981).

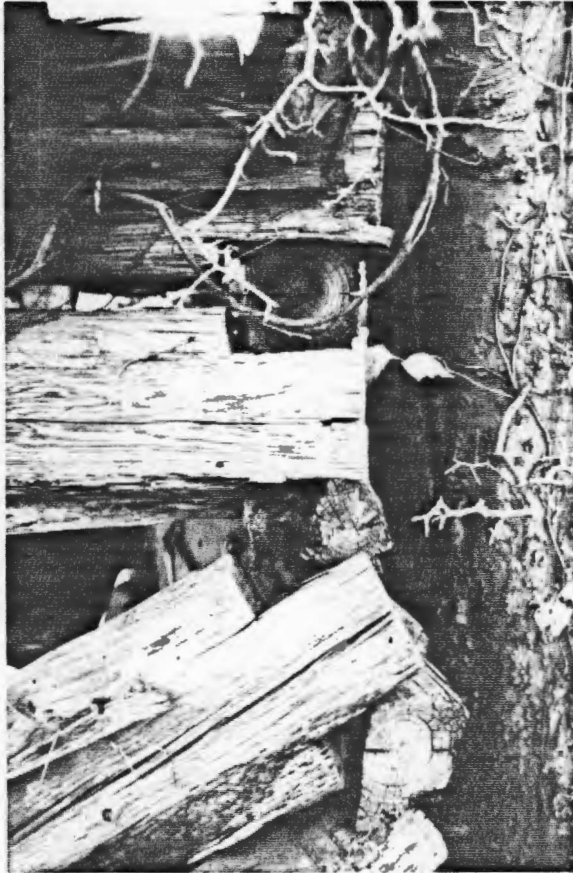


Figure 17. Square notch (Blount County, 1983).

common notch type in the four counties, is the most popular one on each wood type, including pine, a softwood. Jordan's hypothesis that hardwoods are dovetailed and softwoods are V-notched does not apply for East Tennessee.

The general pattern of corner notches in East Tennessee appears to correspond with the areal variations identified by Kniffen and Glassie. The counties nearest to the Valley of Southwest Virginia have higher proportions of V notches than those farther south or along the North Carolina border. The half-dovetail notch, which is common throughout the area, probably diffused to East Tennessee from western North Carolina and southwestern Virginia. The V notch apparently spread down the Valley of East Tennessee from Virginia. The square notch probably spread westward to Blount County from North Carolina because it is common east of the Blue Ridge, and because a recent study of log houses in Grainger County, in upper East Tennessee, revealed only one square-notched house among 146 structures for which notch types were determined. The saddle-notched houses of Morgan County were built during the present century, and their construction was not associated with a particular culture group, but represents a simplification of log construction methods common in the twentieth-century South.¹⁶ In conclusion, it appears that tradition and not wood type was the most important factor in the selection of corner notch types by East Tennessee log house builders.

¹⁶Kniffen and Glassie, *op. cit.*, pp. 63-64; Morgan and Medford, *op. cit.*, p. 168; Newton, Jr., and Pulliam-DiNapoli, *op. cit.*, pp. 377-379.

CHAPTER IV

THE HISTORICAL PATTERN OF HOUSE CONSTRUCTION IN BLOUNT COUNTY

I. INTRODUCTION

Before the Civil War and for a few years after it, most of the houses erected in Blount County were log structures. By the turn of the century, however, few log houses were being constructed. Analysis of the causes of the sharp decline in log construction cannot be carried out without knowing "when" and "where" log, frame, brick, and stone house construction occurred in the county during the nineteenth century.

The historical and geographical pattern of house construction that follows was derived primarily from data collected during a historic building survey conducted in Blount County from 1982 to 1984. Of the more than 4000 buildings surveyed, 927 houses were built before 1905. Construction histories, characteristics, and locations of these 927 buildings provide sample data for a reconstruction of the history and geography of the remaining nineteenth century houses of Blount County. The data were supplemented by historical information, including interviews with elderly residents of the county and accounts of contemporary observers printed in nineteenth-century newspapers.

II. PRE-1860 HOUSES

The survey documented the presence of 127 houses known to have been erected before 1860. Seventy-two (57 percent) of the structures are log, whereas 43 (34 percent) are frame, ten (eight percent) are brick, and two are stone (Figure 18). There is little doubt, however, that a greater proportion of the brick and stone houses remain on the landscape today than do pre-1860 log houses. The vagaries of time, particularly in the form of fire and lack of upkeep, have been more destructive to log houses than to more substantially built brick and stone houses. Probably more pre-1860 frame houses have survived than log houses, but it is known that some frame houses in Blount County towns, especially Maryville, were burned during the Civil War.¹

Permanent white settlement of Blount County began about 1786 when migrants arrived from North Carolina and Virginia.² Although few of the frontier houses remain today, there is reason to believe that a great majority of the early houses were log structures. Most of the frontier houses were single-pen log structures with one-and-a-half stories, although some one and two-story single-pen houses were erected as well as some double-pen structures. There are numerous examples of pre-1860 log houses in Blount County and a

¹Inez E. Burns, History of Blount County, Tennessee (Nashville, Tennessee: Benson Printing Company, 1957), p. 63.

²Ibid., p. 15.

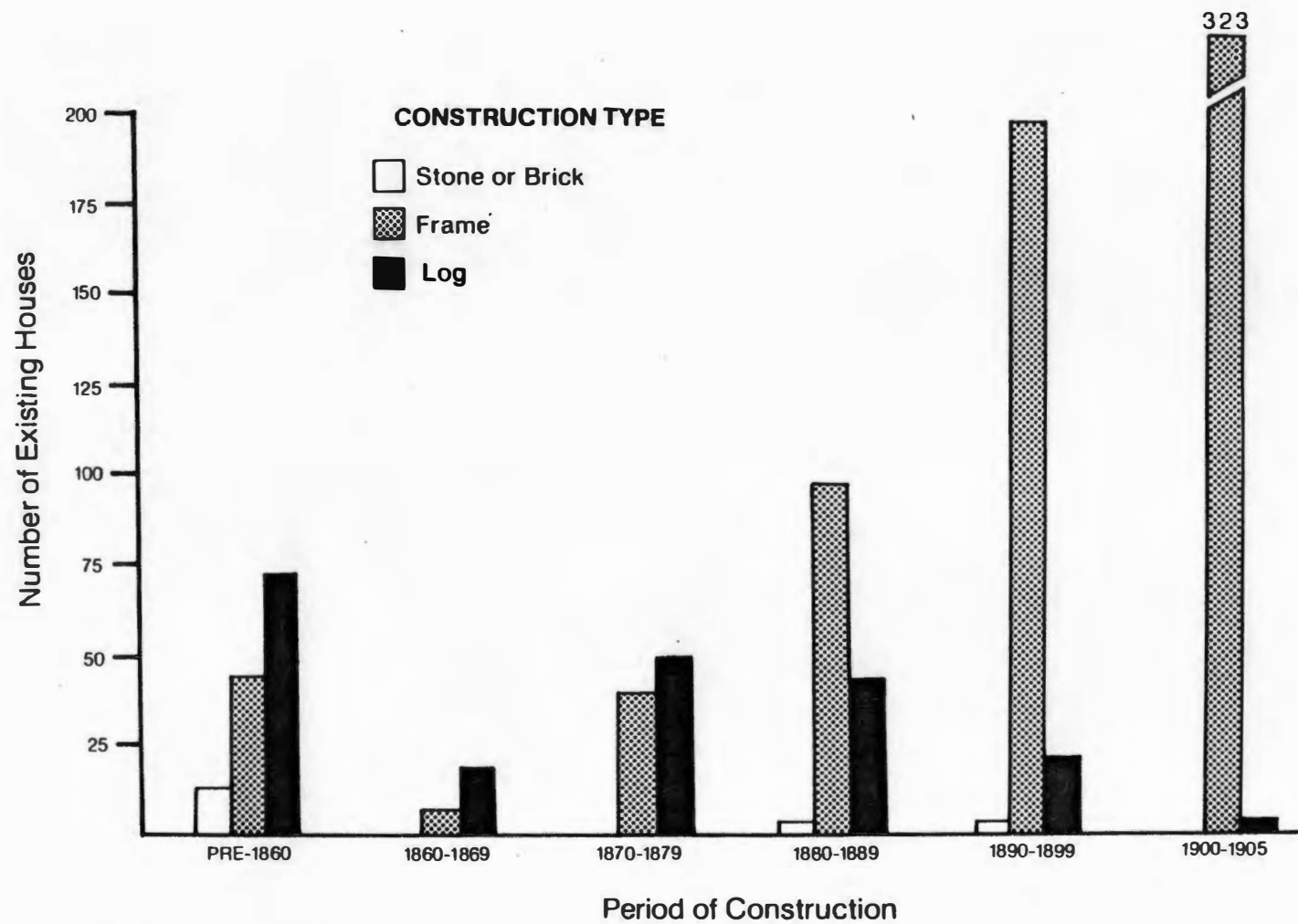


Figure 18. Blount County house construction, by type and period of construction.

few date back to the first years of permanent settlement before 1800 (Figure 19).

In addition to the early log houses, several houses of brick, stone, and frame construction date to the early 1800s, and at least one stone and one frame house were erected in the 1790s (Figure 20). Several of the early frame houses are one-story two-room structures with a central chimney. Later such two-room structures often became rear ells of larger houses. The brick and stone houses tended to be two-story "I" houses, characterized by having two rooms on the second or upper floor situated over two rooms on the lower floor (Figure 21).³

The number of non-log houses constructed in the county increased during the 1840s and especially the 1850s, when numerous two-story frame I houses were built. The log house, however, continued to be the dominant construction type throughout the pre-Civil War period.

Maps showing the locations of remaining pre-1860 houses in Blount County reveal different distributional patterns for log and non-log houses (Figure 22). Log houses are scattered through non-mountainous parts of the county, but houses made of brick, stone, and frame show a more concentrated pattern. Pre-1860 non-log houses are found primarily (1) in the broad valley section which extends

³For a discussion of the characteristics of "I" houses and their location in the United States, see Fred Kniffen, "Folk Housing: Key to Diffusion," Annals of the Association of American Geographers, Vol. 55 (1965), pp. 549-577.

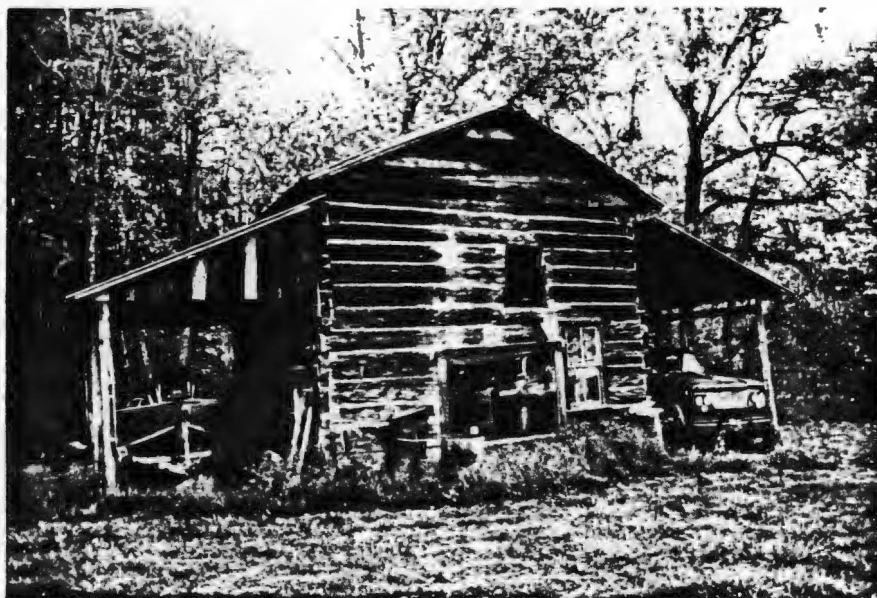


Figure 19. Arnit Shields log house, built in 1818 (Blount County, 1984).



Figure 20. Warner Martin frame house, built ca. 1794 (Blount County, 1984).



Figure 21. Macklin Kerr house, brick "I" house built in 1847 (Blount County, 1984).

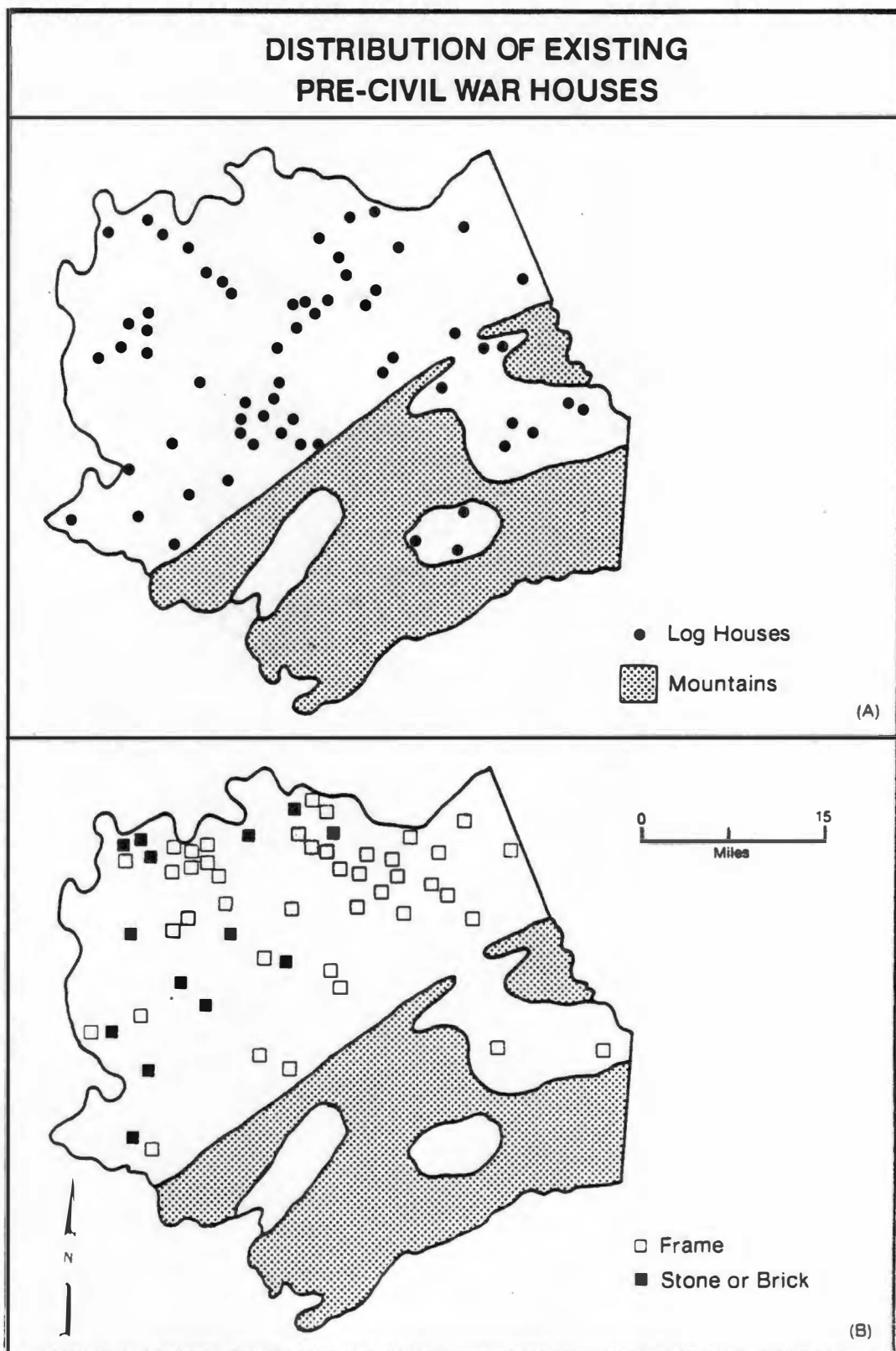


Figure 22. Distribution of existing pre-Civil War houses in Blount County.

through Blount County from northeast to southwest, (2) along the Tennessee and Little rivers, and (3) in Louisville, an early port on the Tennessee River (Figure 1, page 10).

The locations of brick, stone, and frame structures were more dispersed in the 1850s than in previous periods, but were still concentrated in the northern part of the county, especially along the Little River and in the valley section near Rockford and Wildwood (Figure 1). The more rugged, isolated eastern and southern parts of the county contain no existing frame, brick, or stone houses built before 1840. Maps of existing houses, however, are at best general indicators of the past, and there were probably a few non-log houses in the areas which do not contain any today.

The town of Maryville had numerous frame houses before the Civil War, but they were either destroyed during the war, obliterated by urban expansion, or simply lost to the processes of old age. Several pre-1860 houses are known to have been destroyed in other towns or villages in the county, especially Friendsville, Louisville, and Rockford.

In summary, the log house was the dominant pre-1860 construction type in Blount County and its distribution corresponded with the general settlement pattern. Non-log houses, however, were constructed by a minority of families and such dwellings were located primarily in the northern part of the county. The locations of surviving non-log houses are mainly in towns, especially Louisville, and in the better agricultural lands--along the rivers and in the

broadest valley in the county. It is also worthy of note that the concentration of non-log houses in the northern part of the county may represent to an extent the influence of the area's nearness to Knoxville, the urban center of mid-East Tennessee at that time.

III. HOUSE CONSTRUCTION DURING THE 1860s

The Civil War greatly disrupted the social and economic life of East Tennessee. Damage was inflicted by both Federal and Confederate troops, house building declined greatly, and in some sections of the county it came to a virtual halt.⁴ The war so disrupted Blount County life that some houses under construction at the beginning of the war were not completed until the end of the war. Virtually all the houses completed during the war were log structures.

House building increased after the Civil War, but during the late 1860s there remained considerably more activity in log than frame construction. No brick or stone houses survive from the 1860s (Figure 18).

The locations of surviving houses built during the decade reveals a sparse but distinctive pattern (Figure 23). House building in the northern area of the county where numerous houses, including some frame structures, were erected in the 1850s, was virtually non-existent. Most of the houses were built in a belt

⁴Burns, op. cit., pp. 58-67.

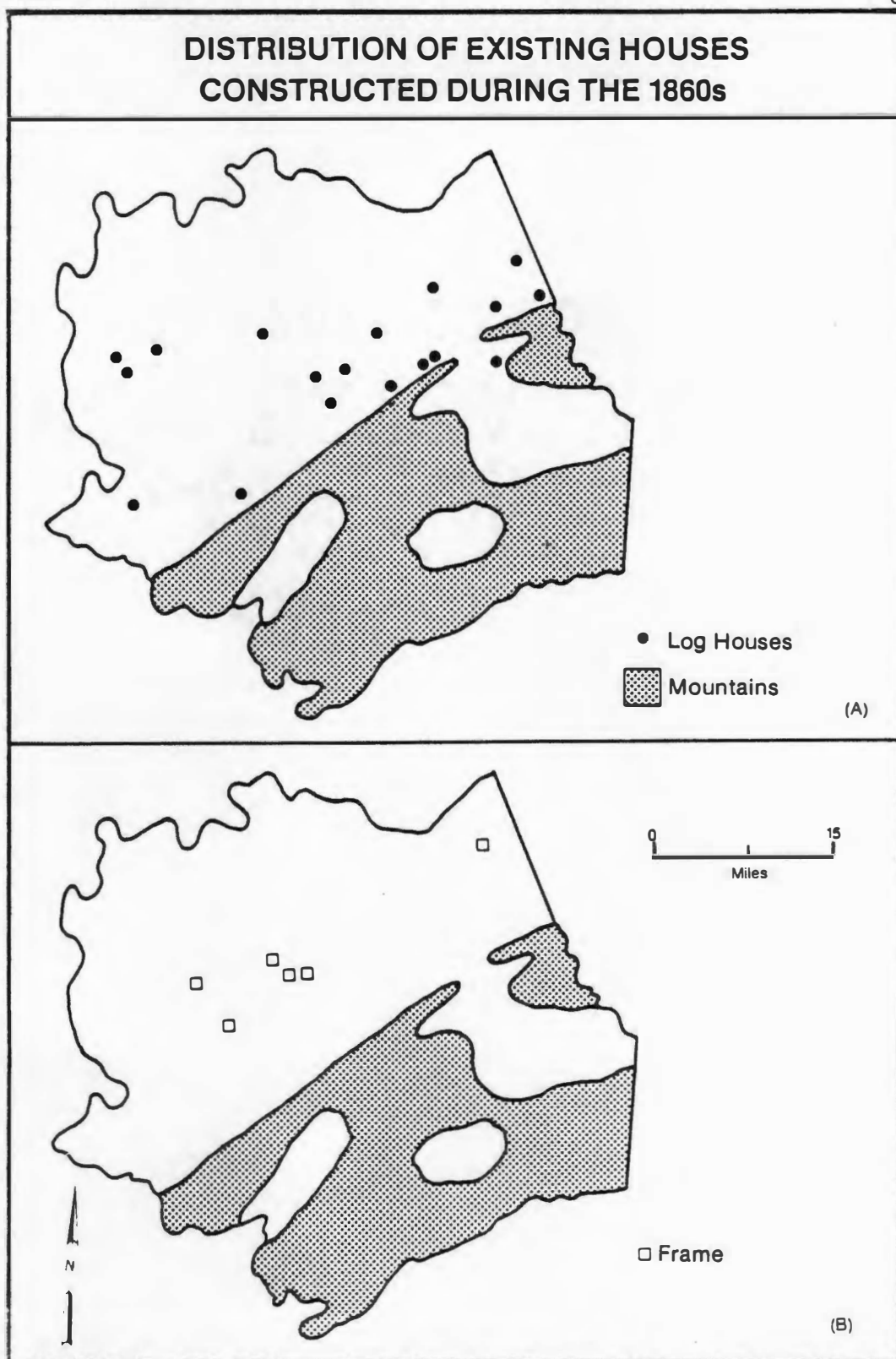


Figure 23. Distribution of existing Blount County houses constructed during the 1860s.

parallel to and slightly west of Chilhowee Mountain. It is likely that this rugged area was less affected by Civil War activity than the less isolated northern part of the county, which includes the towns of Maryville, Louisville, and Rockford.

IV. HOUSE CONSTRUCTION IN THE 1870s

The decade of the 1870s was the last in which more log than frame houses were erected in the rural areas of Blount County. In some communities of the county, however, as many frame houses as log structures may have been built. Of the extant houses, 49 of 88 (56 percent) were log and 39 (44 percent) were frame structures. No brick or stone house survives from the 1870s (Figure 18).

Although log houses were still dominant in farm areas, it is doubtful that log houses were being built in the towns or villages during that time. In fact, houses constructed in towns and villages comprise 26 percent of the extant frame houses constructed during the decade.

The pattern of house construction in Blount County seems to be represented by J. B. Killebrew's assessment of farm buildings in neighboring and more urban Knox County in 1874:⁵

These generally are built of wood. The dwelling-houses often of plank, but most generally of logs. They are neither handsome, comfortable, nor convenient, as compared with the better class of houses.

⁵J. B. Killebrew, *Introduction to the Resources of Tennessee* (Nashville, Tennessee: Tavel, Eastman, and Howell, 1874), p. 557.

Thomas I. Saunders' comments allow one to generalize about the dominance of log houses in rural Blount County in the 1870s. In early 1880, he stated:⁶

The farms are remarkably well enclosed, worm fencing being used almost exclusively, but the houses, as a general rule, are very indifferent log structures.

The decline of house construction in the war-torn 1860s was reversed in the 1870s. The maps of the surviving log and frame houses show that many communities of the county today contain houses erected during the 1870s (Figure 24). The maps also reveal a continuation of the pre-Civil War geographic pattern of log and frame house construction. Log houses were erected throughout most of the county, as indicated by the distribution of surviving log structures. Although the pattern of frame house construction appears to have become more dispersed than before the Civil War, there remained in the 1870s large areas with little or no frame construction. The remaining frame houses dating to the 1870s are concentrated primarily in the northern part of the county, as well as along the Little River and in the town of Maryville.

V. HOUSE CONSTRUCTION IN THE 1880s

The decade of the 1880s is the first in which more frame than log houses were built in Blount County. Saunders' statement indicates that at the beginning of the decade the log house was the common

⁶Thomas I. Saunders, "Letter from East Tennessee," The United Presbyterian, March 25, 1880, p. 202.

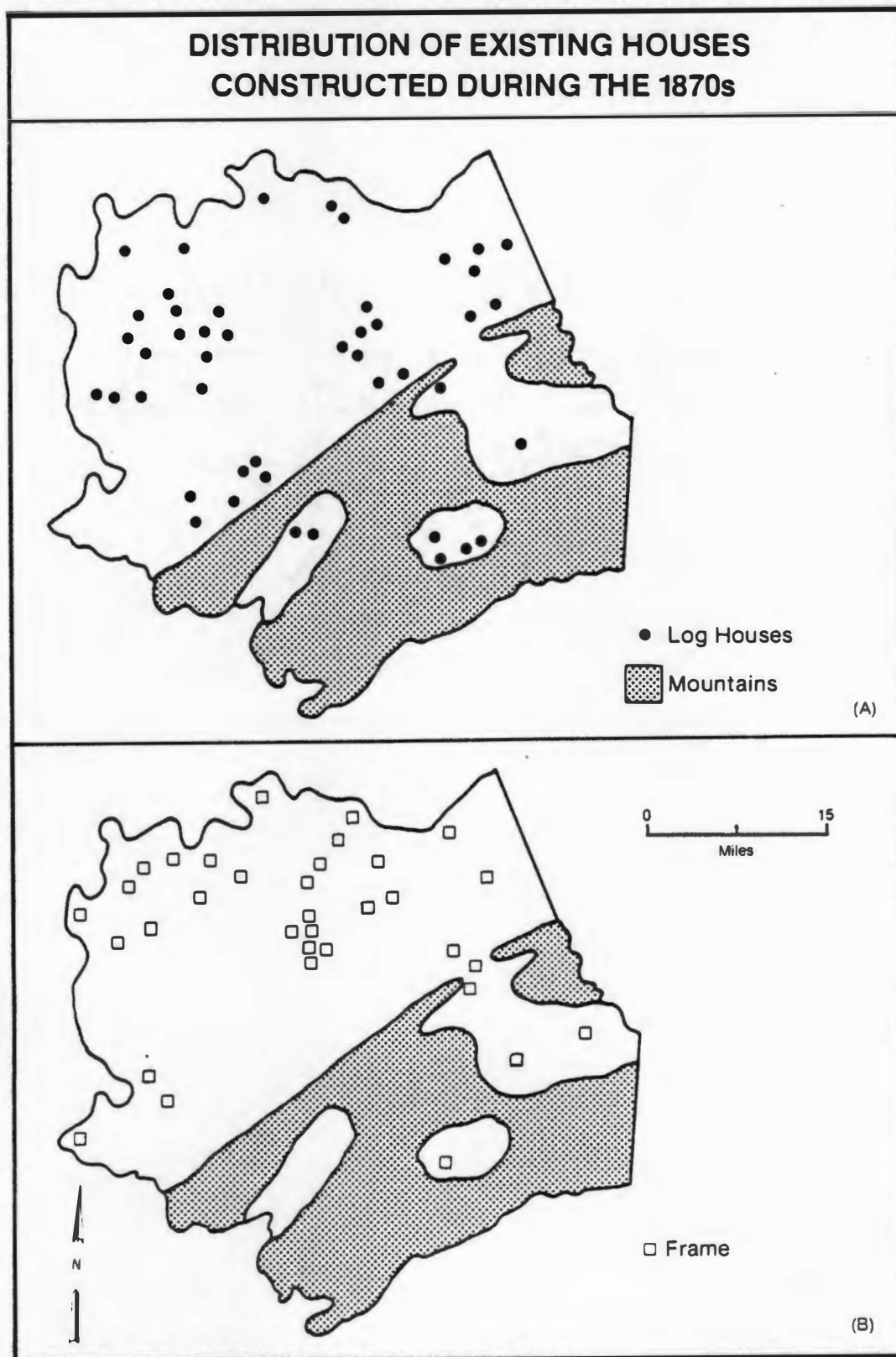


Figure 24. Distribution of existing Blount County Houses constructed during the 1870s.

dwelling type (Figure 25).⁷ The historic building survey shows, however, that based on number of existing structures, frame houses accounted for 70 percent of the residences erected during the 1880s (Figure 26). All except two of the non-log houses were frame structures (Figure 18). It is possible, perhaps probable, that more log houses from the 1880s have been destroyed than have frame houses built during that period. Even if that is the case, it is highly unlikely that differential rates of destruction could offset the overwhelming numerical advantage of frame houses.

Distribution maps of surviving log and frame houses reveal different geographic patterns for houses built in the 1880s than for those built in the 1870s (Figure 27). The distribution of frame houses in the 1880s is much more widespread than in the 1870s. Currently most areas in the county contain houses built in the 1880s, indicating that frame construction had probably diffused through nearly all of the county by the end of the decade. The distribution of log houses in the 1880s was especially concentrated in Tuckaleechee and Miller coves, and in the valleys along the west side of Chilhowee Mountain. Several log dwellings were also erected in the knobby and ridge areas west of Maryville in the northwestern part of the county (Figure 1, page 10).

Evidence that the late-1880s were dominated by frame rather than log construction in at least one area of the county is supplied

⁷Ibid.



Figure 25. Typical post-Civil War log house (Blount County, 1984).



Figure 26. Typical frame "I" house of the 1880s (Blount County, 1982).

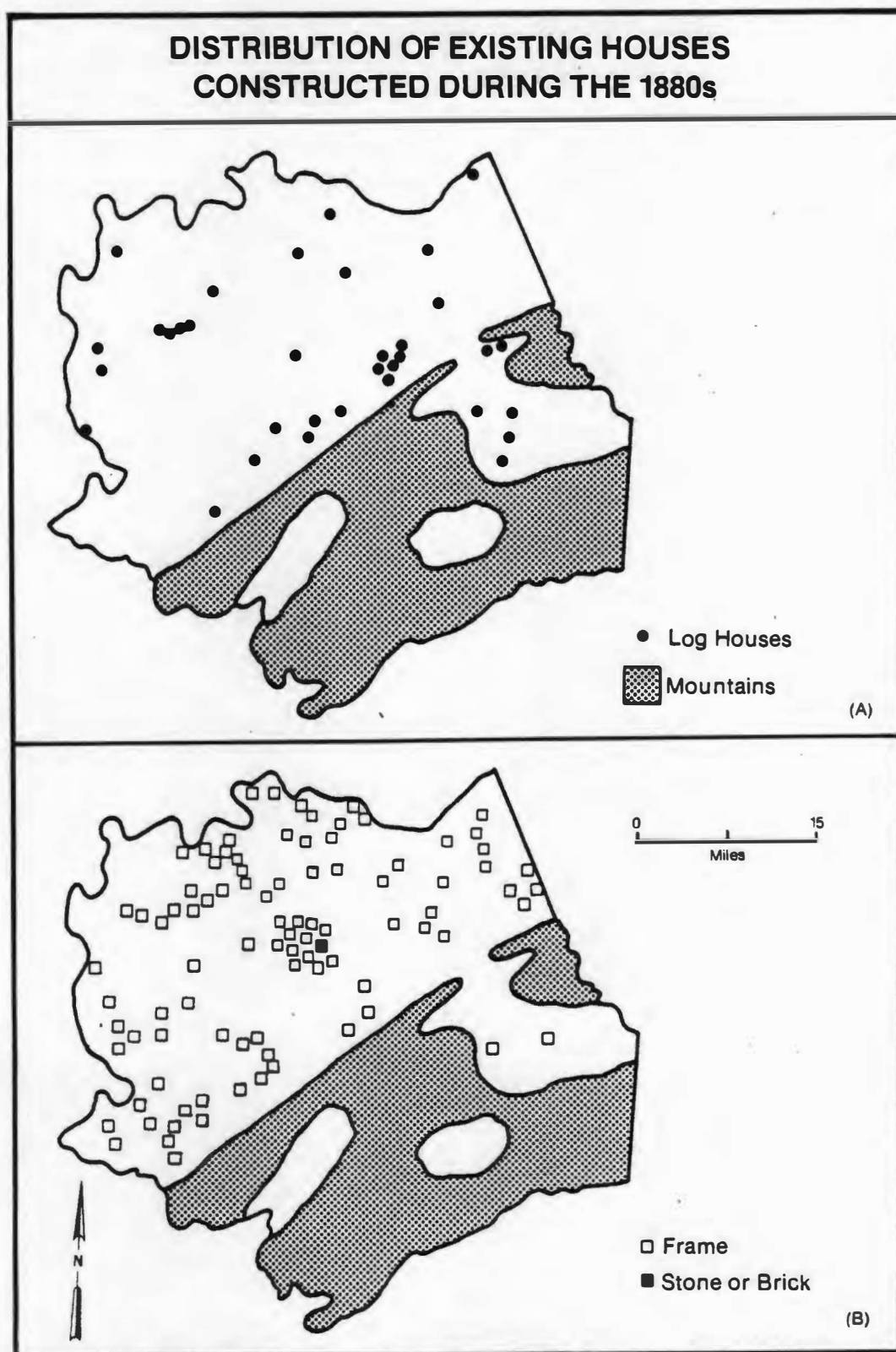


Figure 27. Distribution of existing Blount County houses constructed during the 1880s.

by J. E. Prater. Prater, born in 1881, described conditions of the late 1880s in the Louisville area with remarkable clarity. Prater recalls the presence of several log houses in the Louisville area during his youth, but does not remember one log house being built in the area. He is, however, able to describe the construction of several frame houses in the area during the late 1880s and early 1890s.⁸

Maryville newspapers indicate that there was a great increase in house building in both the towns and rural areas of Blount County during the 1880s. In 1883 two newspapers reported that Maryville was undergoing a building boom.⁹ The building activity apparently continued for several years. In May of 1886 the Maryville Times quoted The Knoxville Journal as stating that Blount County had "shown more enterprise and push in way of manufacturing and building in the past three years than it did for twenty before that."¹⁰ In early 1889 the Maryville Times reported that at least 200 buildings had been constructed in the town during the last three years.¹¹ Smaller towns also experienced increased building activity in the mid- and

⁸J. E. Prater, Louisville, Tennessee, Personal Interview, June 1984.

⁹The Watchman (Maryville, Tennessee), April 24, 1883; The East Tennessean (Maryville, Tennessee), September 17, 1883.

¹⁰Maryville Times, May 19, 1886.

¹¹Maryville Times, January 2, 1889.

late 1880s. For example, in late 1889 seven buildings were either completed or being completed in the village of Friendsville.¹²

During the mid- and late 1880s the rural sections of the county were also experiencing significant increases in the construction of residences. Nearly every issue of the Maryville Times contained local news reports from correspondents representing many of the various communities of the county. Many of the local reports contained references to building activities, and nearly every paper mentioned the construction of one or more houses in some section of the county. For example, in February of 1886 three dwellings were to be "erected in the near future" at Clover Hill, a crossroads settlement southwest of Maryville.¹³

Rural building activity seemed especially brisk during 1889. In August the Twelfth District of the county, a few miles northeast of Maryville was reported to be "on a boom, in building."¹⁴ In November the Huffstettlers Community, several miles south of Maryville, was undergoing "a boom in the way of building new residences."¹⁵

¹²Maryville Times, August 7, 1889.

¹³Maryville Times, February 17, 1886.

¹⁴Maryville Times, August 28, 1889.

¹⁵Maryville Times, November 6, 1889.

VI. HOUSE CONSTRUCTION FROM 1890 TO 1905

Newspapers of the early 1890s indicate a continuation of the building activity of the late 1880s. For example, the Maryville Times of April 23, 1890, indicated new houses were being built in the Big Gully and Gamble's Store sections of the county.¹⁶ In early 1891, residences were under construction in the Waters, Miser Station, and Seaton communities.¹⁷ In May 1892 the Maryville Times stated that "Some pretty residences have recently been erected" in the Ellejoy area.¹⁸ In 1894 houses were reported built in several sections of the county, including Friendsville, Notime, Cliff, Seaton, Tuckaleechee, and Alleghany.¹⁹ The Cliff correspondent of the Maryville Times reported on November 21, 1894 that "Several of our citizens are erecting new buildings."²⁰ Maryville newspapers indicate that the brisk building activity continued in the county throughout the 1890s.

¹⁶Maryville Times, April 23, 1890.

¹⁷Maryville Times, January 21, 1891; February 2, 1891; February 18, 1891.

¹⁸Maryville Times, May 18, 1892.

¹⁹Maryville Times, January 3, 1894; January 31, 1894; February 21, 1894; February 28, 1894; April 4, 1894; May 9, 1894; November 21, 1894; November 28, 1894; October 31, 1894.

²⁰Maryville Times, November 21, 1894.

The great majority of the houses built in Blount County during the 1890s were frame structures, and the degree of dominance of frame structures increased significantly over the previous decade. Of 219 houses built during the 1890s and still in existence in 1984, only 21 (9-1/2 percent) were log structures (Figure 18). Thirty-eight (17 percent) of the houses were erected in towns and villages, and all were non-log structures, almost all frame. When town and village houses are excluded, the proportion of log houses built in the 1890s increased to 11.6 percent of the total built outside the nucleated settlements.

The map of surviving 1890s log dwellings reflects the decline in overall numbers of log structures, and also shows that, as in the 1880s, most of the log houses were scattered through the mountain coves and in the more isolated valleys in the area west of Chilhowee Mountain (Figure 28).

Elderly residents of Blount County lend support to the accuracy of survey data. In addition to J. E. Prater, James T. Gamble, born in 1889, recalled in 1984 that several log barns were erected in the Wildwood area during the mid- and late 1890s, but he could not remember construction of any log dwellings.²¹ The areas

²¹Prater, *op. cit.*; James T. Gamble, Knoxville, Tennessee, Personal Interview, July 1984. Although 96 years old, Gamble's memory for details of his youth is impressive. For example, he not only remembers that the extant four-crib log barn on the old Gamble farm near Wildwood was built in 1895, but he also vividly described Milford DeArmond, the elderly barn carpenter.

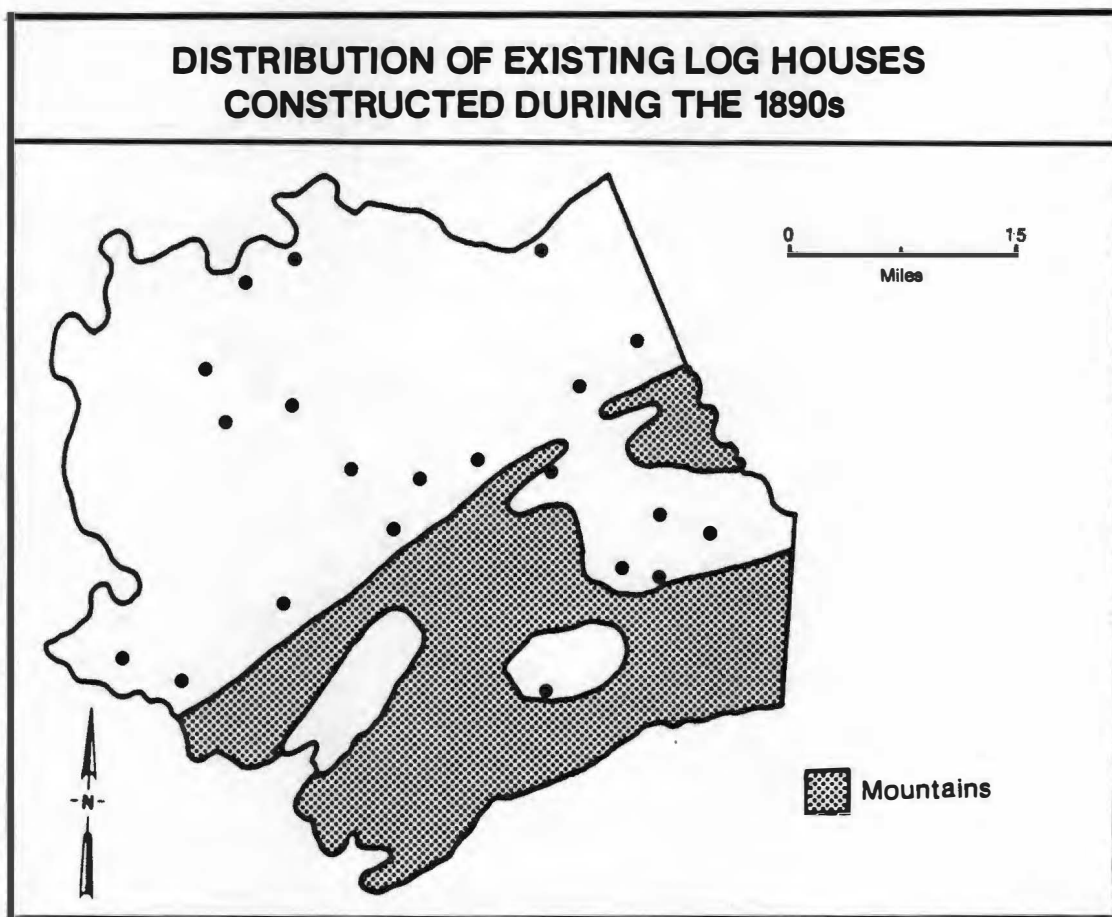


Figure 28. Distribution of existing Blount County log houses constructed during the 1890s.

in which Prater and Gamble grew up had a tradition of frame houses for several years prior to the 1890s, so it is not surprising that neither informant was aware of log house construction in his neighborhood.

An examination of house construction data indicates that by the turn of the century the total demise of log dwelling construction had occurred (Figure 18). Of 327 existing houses built between ca. 1900 and ca. 1905, only about 1 percent were log structures.

VII. SUMMARY

Data from a historic buildings survey indicates that the majority of houses built in Blount County prior to 1880 were log structures. This finding is compatible with the observation of Saunders, who in 1880 reported that most Blount County houses were log buildings. The 1880s was the first decade in which more frame than log dwellings were erected, with 70 percent of the houses built being frame structures. During the 1890s the dominance of frame construction increased to about 90 percent of all houses built, and by the turn of the century log dwellings were seldom erected.

The decline and virtual demise of log construction in Blount County occurred quite rapidly, primarily during the 1880s and 1890s. Such a rapid shift in the method of house construction in an area is likely indicative of other changes in the area's culture.

CHAPTER V

PERSISTENCE OF LOG HOUSE CONSTRUCTION DURING THE NINETEENTH CENTURY

I. INTRODUCTION

The persistence of log house construction in Blount County and East Tennessee until the late nineteenth century reflects the cultural traditions of the area's residents.¹ Most of the nineteenth century log houses were not built as temporary structures to be replaced shortly after construction by more substantial frame or brick buildings. On the contrary, the houses were generally well-constructed permanent buildings. Frame construction was also a cultural tradition in the eastern United States, and many frame dwellings were erected in antebellum East Tennessee, including several in Blount County.

Some of East Tennessee's log house dwellers would have preferred to live in frame houses, but were unable to do so. Whether one preferred to live in a frame or log house, there were certain conditions, other than cultural traditions, that favored log over frame construction. This chapter focuses on conditions that gave log construction advantages over frame construction in Blount County during the nineteenth century.

¹The tradition of log construction in the Upland South, of which Blount County is a part, is described in Fred Kniffen and Henry Glassie, "Building in Wood in the Eastern United States: A Time-Place Perspective," Geographical Review, Vol. 56 (1966), pp. 48-57.

II. TIMBER AVAILABILITY

Throughout the period of log house construction rural Blount County had abundant timber resources, and it is likely that nearly every farm had enough timber to build a log house. Although there is a paucity of historical information on Blount County's timber resources, a few observers indicated that the county was still well-endowed with timber after the Civil War.

In the early 1870s, J. B. Killebrew described the status of timber in Blount County:²

The county everywhere is well supplied with timber, though not always of the best quality, for fencing. On the upland, the black oak predominates, while hickory, post oak, white oak and yellow pine are abundant, the latter of a superior quality for building purposes. Along the streams may be found walnut, wild cherry, ash, and poplar; on the ridges the chestnut, and along the mountains the white, yellow and spruce pine, locust, all varieties of oak, poplars of enormous size, and forests of chestnut.

Later, in 1882, A. W. Hawkins stated that timber in Blount County was abundant, "consisting of pine, hickory, oak, ash, sweet gum, walnut, poplar, beech, &c."³ In the same year a Maryville newspaper, The Watchman, reported that "In every part of the county timber is to be found in abundance, oak and pine being the most

²J. B. Killebrew, Introduction to the Resources of Tennessee (Nashville, Tennessee: Tavel, Eastman and Howell, 1874), p. 463.

³A. W. Hawkins, Hand-Book of Tennessee (Knoxville, Tennessee: Whig and Chronicle Steam Book and Job Printing Office, 1882), p. 89.

plentiful: yet in certain localities poplar, walnut, hickory, chestnut, wild cherry and locust abound."⁴

III. ECONOMY AND EASE OF LOG CONSTRUCTION

The expense of log house construction was usually slight because timber was available on the farm, labor was supplied by family members and neighbors, and few if any construction materials had to be purchased. A farmer, with a work animal, could remove the required number of logs from his woods, and he could cut and hew the logs to the desired lengths and widths. The construction of the log pen, however, was usually a cooperative effort on the part of the farmer and his neighbors.

Such a "house raising" was described by George Brewer, who observed the construction of log buildings in Coosa County, Alabama. His description is believed typical of log house construction in Blount County during much of the nineteenth century:⁵

When the logs for a house were cut and put on the ground near where the house was to be built the neighbors were invited to come to the house raising on specified day. They would assemble by seven or eight o'clock, and after

⁴The Watchman (Maryville, Tennessee), April 26, 1882.

⁵George E. Brewer, "History of Coosa County, Alabama" (Manuscript in Alabama Department of Archives and History, Montgomery), quoted in Frank Lawrence Owsley, Plain Folk of the Old South (Baton Rouge: Louisiana State University Press, 1949), pp. 106-107. Cooperative work efforts among neighbors in Blount County are described in A. Randolph Shields, The Cades Cove Story (Gatlinburg, Tennessee: Great Smoky Mountains National History Association, 1977), pp. 34-37.

the sills had been properly placed on their pillars of sawed lightwood blocks, or rocks, four men, skillful with an axe, were chosen as corner men, and each took possession of a corner . . . The other men brought the logs and hoisted them to the corner men who would proceed at once to cutting a notch so as to fit the log below after the first had been fitted to the sill, so as to keep the wall both perpendicular and steady. Often a good fit would be secured at the first cutting. If not, the corner men turned the log up, remoddled [sic] the notch until a fit was secured. These men had for scaffolding on which to stand while cutting and fitting these notches only the cracks between the logs, or . . . [the] top of the turned up log . . . usually by night the house would be raised and the rafters (commonly skinned poles) were properly set upon the plates, as the flattened top log was called.

Mary White, a resident of the Rocky Branch section of Blount County and born in 1892, confirms the tradition of house raisings in the county. When interviewed in 1982, she vividly recalled her grandfather's description of the construction of his log house, Mrs. White's residence, built in 1869. The house was raised in one day with the help of neighbors, and Mrs. White, without hesitation, recalled the names of the four cornermen and pointed out the corner that each manned while erecting the log pen.⁶

The cost of building a house would be more expensive if a house carpenter were hired to supervise and participate in the operation. In Blount County house carpenters were sometimes hired to build log dwellings, which usually, though not always, belonged to the more affluent farmers.⁷ A good log pen, including the wall

⁶Mary White, Route One, Walland, Tennessee, personal interview, November 1982.

⁷For example, the Cal Lane house, in the Walland area, was built ca. 1880 by well-known Blount County house carpenter, "Snakey" John Martin.

plates and rafters, could be erected in a single day with community help. The farmer was left with unfinished tasks such as chinking the spaces between the logs, putting boards on the roof, constructing a chimney, and perhaps putting planks on the gables of the structure.

In sum, log construction was inexpensive and relatively easy. It would not seem to be an easy task, when one considers that individual logs weighed several hundred pounds, and some of them had to be lifted several feet high during the construction of a log wall. Log house construction, however, can usually be considered relatively easy when compared to the alternative, that is, the construction of a frame house.

IV. DIFFICULTY IN OBTAINING SAWN LUMBER

Difficulty in obtaining sawn lumber because of lack of access to sawmills was one of the most important reasons residents of Blount County and other areas of the Upland South continued to build log houses decades after the initial settlement period. Before the Civil War almost all the sawmills in Blount County and East Tennessee were water-powered mills, and their locations were limited to streams with adequate flow to turn a water wheel.⁸

⁸Historical information on water-powered sawmills are included in Fred H. Gilman, "History of the Development of Sawmill and Woodworking Machinery," Mississippi Valley Lumberman, Vol. 36 (February 1, 1895), pp. 59-61; Henry C. Mercer, Ancient Carpenter Tools (Doylestown, Pennsylvania: Bucks County Historical Society,

Sawmills came into existence in Blount County with the beginning of permanent white settlement. They were usually built in conjunction with gristmills, but not all early gristmills were associated with sawmills. A gristmill is known to have existed in Blount County as early as 1788, but it is not known if a sawmill was present with the mill. At least five sawmills were in operation (with gristmills) in the county before 1800, and there may have been other sawmills at gristmill sites that were not specifically mentioned in early county records.⁹

The five pre-1800 sawmills were Warner Martin's Mill on Nails Creek near Wildwood; James McNutt's Mill on Pistol Creek in the present-day town of Alcoa; Andrew Kennedy's Mill on Little River near Wildwood; Samuel Shaw's Mill on Cloyd's Creek near Unitia; and Josiah Danforth's Mill on Pistol Creek in Maryville.¹⁰ Several other sawmills are known to have been in operation before the Civil War, but the Eighth Census of the United States lists only six sawmills

Fifth Edition, 1975), pp. 25-30; John W. Oliver, History of American Technology (New York: The Ronald Press Company, 1956), pp. 26-28; and Charles E. Peteeson, "Sawdust Trail," Association for Preservation Technology Bulletin, Vol. 5, No. 2 (1973), pp. 84-87. A good regional treatment of water-powered sawmills in the United States is Donald A. Hutsler, "Ohio Waterpowered Sawmills," Ohio History, Vol. 84, No. 1 and 2 (1975), pp. 6-58.

⁹Vic Weals, "Idle Mill Gone with the Wind," Knoxville Journal, December 29, 1977 and "It's an Old, Old Road to Warner Martin's Mill," Knoxville Journal, December 15, 1977; Inez E. Burns, History of Blount County, Tennessee: From War Trail to Landing Strip, 1795-1955 (Nashville, Tennessee: Benson Printing Company, 1957), pp. 217-218; Louise Lanstrath Messler, "Cloyd's Creek," Maryville Times, June 8, 1942.

¹⁰Ibid.

and eight sawmill employees for Blount County in 1860.¹¹ There were likely a few sawmills not surveyed in the 1860 Census, but even if several pre-Civil War sawmills were not mentioned, it is apparent that most residents of the county were not well served by sawmills during the first half of the nineteenth century.

Antebellum sawmills in Blount County engaged in custom sawing. Sawmill personnel did not go out in the community to bring logs to the mill. A farmer "snaked" logs from his woodland and transported them to the nearest mill where the logs were then sawn to boards. The transportation of logs only a short distance to a mill was a difficult task for a farmer, who in most cases did not have adequate animals or equipment to easily convey logs to the mill. Even softwood logs of reasonable length weighed several hundred pounds each, and to build a frame house several such logs would have to be transferred to the mill and the lumber transported back by wagon or sled.

In addition to problems caused by poor access to Blount County sawmills before the Civil War, the nature of water-powered sawmills presented another problem--they were very slow. Water-powered sawmills of Blount County used the sash saw, also called the frame or up-and-down saw. The saw frame was connected to a water wheel by a series of belts, pulleys, and wooden gears. The operation of such a sawmill has been described by Graeme Wynn:¹²

¹¹Eighth Census of the United States: 1860 (Washington: U. S. Bureau of the Census, 1864).

¹²Graeme Wynn, Timber Colony: A Historical Geography of Early Nineteenth Century New Brunswick (Toronto: University of Toronto Press, 1981), p. 87.

The most simple early sawmills had a single blade mounted vertically in a frame (the "sash" or "gate") and operated by direct connection with a crank. As the reciprocating blade made its cut, the log was carried along on a carriage regulated by a hand-operated ratchet. Once the length of the log had been sawn, the carriage was drawn back, the log realigned and operation repeated.

Cutting capacity of sash saw mills was low and varied considerably with the amount of water flow. Clarkson estimates the vertical strokes of Appalachian sash saws at less than 80 strokes per minute and the capacity of early mills at 500 linear feet per day.¹³ Sash saws in the Pacific Northwest were estimated to have a capacity of from 500 to 1500 feet per day depending on water availability.¹⁴

In 1916 William B. Lenoir wrote a history of the Sweetwater Valley, located around the town of Sweetwater in adjacent Monroe County.¹⁵ In describing conditions in the 1820s, Lenoir stated that "there were no saw mills except those using the up and down straight saw; consequently most of the houses first built were of hewed logs and in many instances floors of puncheons."¹⁶ Lenoir did not

¹³Roy B. Clarkson, "Mountain Logging in the Appalachians at the Turn of the Century," Southern Lumberman, Vol. 233, No. 2896 (December 15, 1976), p. 118.

¹⁴Ralph W. Andrews, This was Sawmilling (Seattle, Washington: Superior Publishing Company, 1957), p. 12.

¹⁵William B. Lenoir, History of Sweetwater Valley, Tennessee (Baltimore, Maryland: Regional Publishing Company, 1976, reprint of 1916 edition).

¹⁶*Ibid.*, p. 162.

bother to explain why one built a log house if only sash sawmills were present. Writing in 1916, he probably felt no need to explain the obvious--if one lived a reasonable distance from a water-powered mill, one generally built a log house rather than confront the transportation problems inherent in frame house construction.

Poor access to sawmills did not mean that a farmer could not obtain some lumber for house construction. Most log houses used boards for roofing and to cover the gable ends of the structure. In addition, inside walls were sometimes lined with sawn planks. Roof boards, which were only a few feet in length, were split by farmers with a club and a froe, but longer boards had to be sawn. Some farmers relied on sawmills for lumber, but others sawed the lumber on their farms with a whip saw or pit saw.¹⁷ Whip-sawing or pit-sawing consisted of two men sawing a log into boards by pulling a rip saw by hand. A log was laid on a platform beneath which was a pit. The saw was moved vertically by one man in the pit and another above the log on the platform, but the saw only cut on the downward stroke.¹⁸ Whip sawing was a very difficult and slow process. Clarkson stated that "two men could saw about 100 linear feet of plank in one day of back breaking toil."¹⁹

¹⁷Historical information on the pit or whip saw is provided in Gilman, op. cit., p. 59 and Mercer, op. cit., pp. 21-25.

¹⁸"Saws of several patterns were used; the most common had a blade six or seven feet in length"; Nollie Hickman, Mississippi Harvest, Lumbering in the Longleaf Pine Belt, 1840-1915 (University, Mississippi: The University of Mississippi, 1962), p. 16.

¹⁹Clarkson, op. cit., p. 118.

The extent to which the whip saw was used in Blount County is not known, but it was probably common. Burns stated that the Peter Brickey log house in Tuckaleechee Cove had whip-sawed rafters.²⁰ Its use in other parts of East Tennessee and Appalachia has been reported. In the mountains of neighboring Monroe County John Stratton used a whip saw to saw boards from logs to panel the inside walls of a log house, built in 1839.²¹ Later, in 1852, the Stratton family whip-sawed a coffin for a visiting relative who died at the Stratton home.²²

Some Blount County residents either did not perceive a need for sawn lumber or were unable to obtain it. These people built their houses completely of logs, including the gable ends. The Elijah Hatcher house, built in the 1830s in West Millers Cove, and the Elijah Oliver house, built in the 1870s in Cades Cove, were erected with logs in the gable ends of the buildings (Figure 29). Numerous outbuildings were constructed in Cades Cove with log gable ends.

The advantage of using logs up to the apex of the structure is that neither sawn lumber nor nails are required for the construction of a log pen. These existing structures with log gable ends

²⁰Inez Burns, "Settlement and Early History of the Coves of Blount County, Tennessee," East Tennessee Historical Society Publications, No. 24 (1952), p. 55.

²¹Vic Weals, "Each Member Had a Hand in Building the Stratton Home," Knoxville Journal, December 29, 1983.

²²Vic Weals, "Strattons Left Name on Mountain," Knoxville Journal, December 22, 1983.

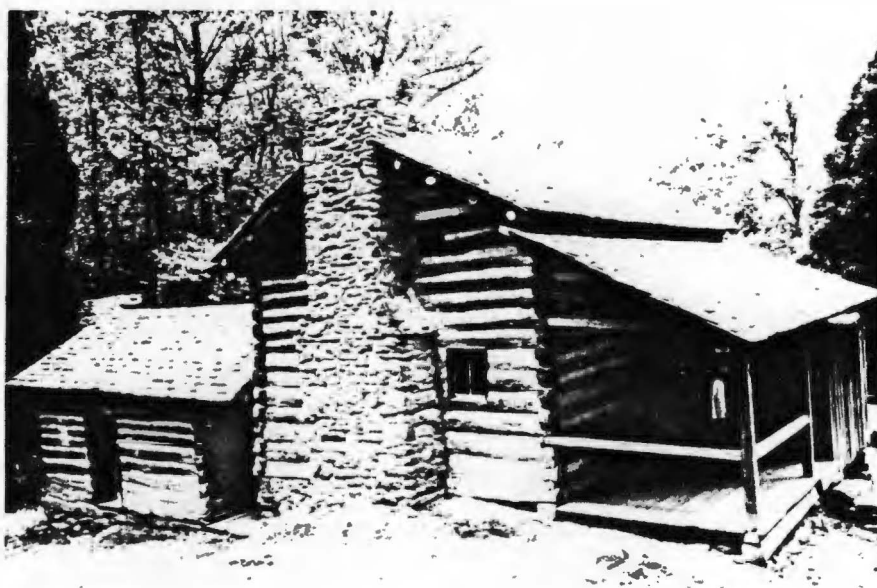


Figure 29. Elijah Oliver log house in Cades Cove, Blount County (1984). Note the presence of gable-end logs extending to the apex of the structure.

are found in some of the more isolated sections of the county. Their presence illustrates that it was difficult for some farmers to obtain even small amounts of sawmill lumber during much of the nineteenth century. In Cades Cove the first sawmill is believed to have been erected in 1879. Before that time it would have been unusual for a farmer to haul logs to be sawed at a mill outside the isolated cove.²³

V. THE NATURE OF FRAME CONSTRUCTION BEFORE 1860

Even if a farmer obtained sawn lumber it was not easy to build a frame house in Blount County during the first half of the nineteenth century. The type of frame construction prevalent in East Tennessee was timber frame construction, sometimes referred to as post and beam or braced frame construction.²⁴ The timber

²³A. Randolph Shields, Maryville, Tennessee, personal interview, May 1983.

²⁴Timber frame construction descended from European half-timber construction, in which the wall spaces between the posts and braces were filled with a nogging, usually brick. Half timber construction was transferred to the seaboard areas of colonial America, but eventually weatherboarding was added and the nogging generally omitted from American houses.

Timber frame construction in nineteenth century Tennessee is described by James Patrick, Architecture in Tennessee, 1768-1897 (Knoxville, Tennessee: University of Tennessee Press, 1981), pp. 16-30, although Patrick prefers the term "braced frame construction" rather than "timber frame construction." Other discussions and illustrations of timber frame are found in Carl W. Condit, American Building, Materials and Techniques from the First Colonial Settlements to the Present (Chicago: University of Chicago Press, Second Edition, 1982), pp. 2-25; Paul E. Buchanan, "The Eighteenth-Century Frame Houses of Tidewater, Virginia," in

frame consisted of a series of large wall posts and beams supported by equally substantial braces (Figure 30).

In many of the early East Tennessee timber frame houses all the members--corner posts, plates, studs, and braces--were hand hewn. Even if the members were sawn by a sash sawmill or a whip saw, and hewing was not required, the construction of the timber frame presented difficulty. Expert carpentry skill was needed to erect the frame because the posts, beams, braces, and studs were interconnected by mortises, tenons, and pegs (Figure 30). Even for a basic, non-elegant timber frame house the task of making mortises, tenons and pegs and auguring peg holes was such that completion of a frame house was usually a rather long involved process. Some of the older Blount County frame houses took several years to complete.

It is difficult today to determine construction characteristics of frame houses because the frame is normally covered by exterior siding and interior paneling. Occasionally, however, the frame of an abandoned or dilapidated house is visible and determination of the construction technique is possible. In addition, one can sometimes discern some of the construction characteristics of a house by examination of the structure from a basement or an attic. Complete examination was possible for very few pre-Civil War frame

Charles E. Peterson, Editor, Building Early America, Contributions Toward the History of a Great Industry (Radnor, Pennsylvania: Chilton Book Company, 1976), pp. 54-73; Dell Upton: "Traditional Timber Framing," in Brooke Hindle, Editor, Material Culture of the Wooden Age (Tarrytown, New York: Sleepy Hollow Press, 1981), pp. 35-93.

TIMBER FRAME CONSTRUCTION

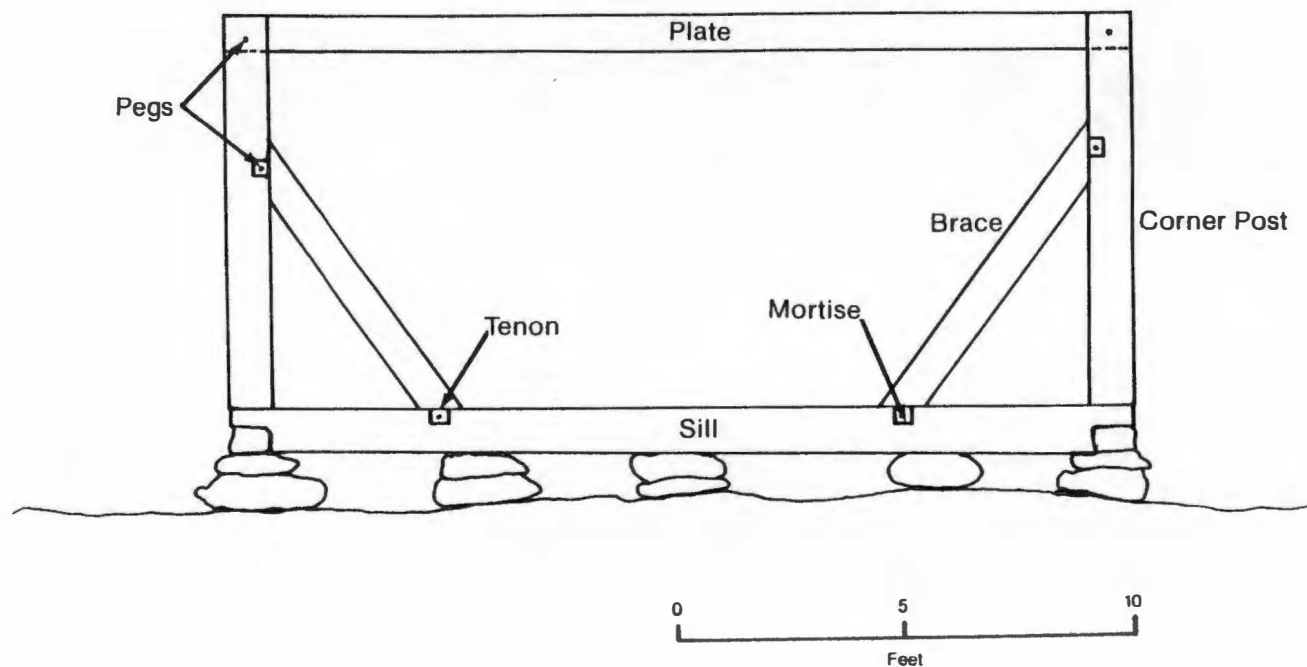


Figure 30. Timber frame construction.

Source: Modified from Gerald W. Kline, Robert A. Pace, and Linda Carnes, An Archeological Reconnaissance Survey of the Proposed Pigeon Forge Park, Sevier County, Tennessee (Knoxville: Department of Anthropology, The University of Tennessee, Knoxville, 1983), p. 14.

houses in Blount County, but 21 were observed in enough detail to determine the construction type. All 21 of the buildings exhibited characteristics consistent with timber frame construction.

VI. THE NUMBER OF CARPENTERS

Another possible reason contributing to a farmer's decision to build a log house rather than a frame house was the dearth of carpenters, especially during the early settlement period. The average farmer may have been skilled with an ax but generally was not adequately prepared to build a timber frame house without assistance. James Patrick described the skill required of Tennessee carpenters in constructing a timber frame house:²⁵

The skill house carpenters brought to their work was the ability to cut and carve chimney pieces, doors, and moldings and to join to wood with mortises, tenons, and pegs in house frames, trusses, and paneling. Each frame house was the work of carpenters who let each stud into the sill and plate, set the corner posts and braces, and attached each piece of weatherboarding to the studs with pegs.

There were few carpenters in early East Tennessee even in the larger towns. The state capital of Knoxville had only five carpenters in 1801, and it can be assumed that there were proportionally fewer carpenters in rural areas around Knoxville at that time.²⁶ Rural areas in Blount County were probably not well served

²⁵James Patrick, Architecture in Tennessee, 1768-1897 (Knoxville: University of Tennessee Press, 1981), pp. 19, 21.

²⁶*Ibid.*, p. 18.

by carpenters before the Civil War. As late as 1870 there were only 35 carpenters in the county and at least 14 and perhaps as many as 19 of those were located in Maryville²⁷ (Table 1). Most rural communities had only one or two carpenters and several, such as Cades Cove, Tuckaleechee, and Chilhowee, had none listed in the 1870 census manuscript returns.²⁸ It is possible that some carpenters were also farmers, and appear in the census with "farmer" as occupation rather than "carpenter."

It is difficult, if not impossible, to determine to what extent the demand for carpenters was being met in nineteenth century Blount County. It appears, however, that there was a shortage of carpenters in the rural sections of the county, and any shortage of house carpenters would likely mean that more farmers would opt to build log houses, which could be erected with less skills.

VII. AVAILABILITY AND COST OF NAILS

An additional factor that might influence the decision to build a log house was the availability and price of nails during the pre-Civil War period. Before the 1700s only hand-wrought nails were available in this country. Cut nail machines came into use

²⁷Ninth Census of the United States, 1870, Manuscript Schedules of Population for Blount County.

²⁸Ibid.

TABLE 1
NUMBER AND DISTRIBUTION OF CARPENTERS IN BLOUNT COUNTY, 1870

District	Post Office	No. of Families in District	No. of Carpenters in District
1	Morganton Brick Mill	158	0
2	Morganton	135	1
3	Morganton Coyte Unitia	145	2
4	Unitia Friendsville	159	3
5	Friendsville Miser Station	145	2
6	Clover Hill	138	2
7	Maryville Montvale Springs	125	5
8	Maryville	144	1
9	Maryville	303	14
10	Louisville	189	2
11	Rockford	156	1
12	Maryville	115	1
13	Ellejoy	183	0
14	Gamble's Store	174	1
15	Tuckaleechee	186	0
16	Cades Cove	66	0
17	Chilhowee	86	0
		<u>2607</u>	<u>35</u>

Source: Ninth Census of the United States, 1870, Manuscript Schedules for Blount County.

during the late 1700s, but were probably not widely distributed until the early nineteenth century.²⁹

Little is known about the production and distribution of nails in early East Tennessee, but soon after 1800 nails were being made by one of the Embree brothers (Elihu and Elijah) in Washington County.³⁰ Elijah Embree apparently became the principal supplier of nails for all of East Tennessee. In 1834, Eastin Morris in The Tennessee Gazeteer, wrote that Embree's nail factory "supplied nearly the whole country east of Huntsville, Alabama with first rate nails."³¹

Nails were certainly available in the towns of East Tennessee by the 1830s. An advertisement in the Knoxville Register in April 1834 announced that Robert King had "just received for sale, on the usual terms--forty seven kegs Embree's Nails assorted."³² The supply of nails appears to have increased by the early 1840s, when Knoxville merchants advertised "Eastern" and "Tennessee" nails.³³

²⁹Lee H. Nelson, "Nail Chronology as an Aid to Dating Old Buildings," American Association for State and Local History Technical Leaflet 48, History News, Vol. 24, No. 11, November 1968. Although much remains to be learned about the history of nail production in the United States, the best sources on the subject are Nelson and Henry C. Mercer, The Dating of Old Houses (Doylestown, Pennsylvania: Bucks County Historical Society, 1976), pp. 2-10, and Ancient Carpenters' Tools, op. cit., pp. 235-260.

³⁰Patrick, op. cit., p. 26.

³¹Eastin Morris, The Tennessee Gazeteer (Nashville, Tennessee: W. H. Hunt, 1834), p. 129.

³²Knoxville Register, April 30, 1834.

³³Knoxville Register, January 13, 1841.

By 1850 nails in varied sizes were available in Knoxville and Maryville stores. The Knoxville Register in June 1850 carried an advertisement for merchant C. Wallace informing that a large consignment of Eastern and Tennessee nails, of all sizes, had been received.³⁴

In 1855 Toole's Hardware in Maryville reported the receipt of "20 kegs best Eastern nails, for sale cheap,"³⁵ and in 1857 T. J. and C. Powell of Knoxville advertised a stock of 200 kegs of nails "assorted from 3 to 40."³⁶ It is not known, however, to what extent neighborhood stores, removed from the towns, carried nails during the pre-Civil War period.

Nail prices decreased significantly during the 1840s. In Knoxville Eastern nails sold for 10 to 10-1/2 cents per pound in 1841, and Tennessee nails for 9-1/2 cents per pound.³⁷ By 1849 Eastern nails were sold for 7-1/2 cents per pound and Tennessee nails for 6-1/2 cents per pound.³⁸

It is difficult to determine what role availability and price of nails played in the decision of a farmer to build a particular kind of house in antebellum Blount County. It appears that by the 1830s nail supply in East Tennessee and Blount County was not a

³⁴Knoxville Register, June 29, 1850.

³⁵East Tennessean (Maryville, Tennessee), October 26, 1855.

³⁶Brownlow's (Knoxville, Tennessee), March 21, 1857.

³⁷Knoxville Register, January 13, 1841.

³⁸Knoxville Register, May 30, 1849.

problem. The price of nails, however, may have discouraged some farmers from building frame houses.

VIII. THE TRADITIONAL ECONOMY

The economy that developed in East Tennessee during the nineteenth century contributed to the dominant role of the log house in the area. By 1840 Tennessee had emerged from the frontier period, but conditions did not change to the extent they did in Middle and West Tennessee, where commercial agriculture developed significantly during the late Antebellum period.³⁹ A self-sufficient agricultural economy persisted in East Tennessee, and most of its inhabitants were non-slave-holding yeoman farmers, who worked small farms with their families. They had very little money but were not destitute; they produced nearly everything they consumed and did not go lacking in the basic necessities of life.⁴⁰

³⁹Frontier life and economy in East Tennessee are described in William Flinn Rogers, "Life in East Tennessee Near End of Eighteenth Century," East Tennessee Historical Society Publications, No. 1, 1929, pp. 27-42; and Thomas Perkins Abernethy, From Frontier to Plantation in Tennessee (Chapel Hill: University of North Carolina Press, 1932), pp. 144-163.

The character and development of agriculture in Tennessee in the late Antebellum period are discussed in Blanche Henry Clark, The Tennessee Yeomen (Nashville, Tennessee: Vanderbilt University Press, 1942); Frank L. and Harriet C. Owsley, "The Economic Structure of Rural Tennessee, 1850-1860," Journal of Southern History, Vol. 8 (1942), pp. 161-182; Frank Lawrence Owsley, Plain Folk of the Old South (Baton Rouge: Louisiana State University Press, 1949).

⁴⁰Clark, op. cit., pp. 1-7.

However, such an economy probably did not generate the capital required to purchase construction materials for a frame house or to hire a house carpenter to build the structure.

According to Clark, East Tennessee did not develop commercial agriculture to a great extent because of problems with poor soils, topography, and inaccessibility to markets.⁴¹ The mountains of East Tennessee had thin soils, but contained much timber, and wild grasses were abundant enough in the mountains to allow for the development of stock grazing. The valleys of East Tennessee had fertile soils and produced general crops, especially grains such as corn, wheat, and oats.⁴²

In 1850 and 1860, about 60 percent of East Tennessee farmers owned their land, with the rest being tenants, sharecroppers, day laborers, and squatters.⁴³ Eighty-eight percent of the farmers in 1860 were non-slaveholders. Of these, 65 percent owned between 50 and 300 acres of land, whereas only 4 percent owned between 500 and 1000 acres. The largest group of non-slaveholding farmers, about 32 percent, owned between 100 and 200 acres of land, whereas 18 percent owned between 50 and 100 acres and 14 percent owned 200 to 300 acres.⁴⁴

⁴¹Ibid., p. 8.

⁴²Ibid., p. 8.

⁴³Ibid., pp. 9, 27.

⁴⁴Owsley and Owsley, op. cit., p. 176.

Although East Tennessee slaveholders had larger farms than non-slaveholders, most of them did not own large plantations. Forty percent had farms of between 100 and 300 acres, and 60 percent owned farms of less than 500 acres. Twenty percent, however, did own larger farms of between 500 and 1000 acres.⁴⁵

Owsley and Owsley attempted to explain why 40 percent of East Tennessee's farmers were non-landowners in 1850 and 1860, when large amounts of public land in East Tennessee were available. They believed that many of the non-owners were renters who preferred to rent good valley lands rather than buy and have to improve more marginal lands. Some renters also had family ties with their landlords; they may have rented from their parents, a father-in-law, or an uncle. Many of the farmers who are classed as squatters may have been in the process of acquiring lands they occupied.⁴⁶ The fact that 40 percent of East Tennessee farmers were landless had an effect on house building patterns in the area, because it is unlikely that one who did not own land would build a frame house.

According to contemporary observers, economic conditions in East Tennessee during the 1870s did not differ greatly from conditions during antebellum days. Killebrew characterized the great majority of East Tennessee farmers in the 1870s as small farmers owning 100 to 200 acres of land and working the fields themselves.

⁴⁵Ibid., pp. 176, 179. It should be noted that the acreage was not determined for 14 percent of non-slaveholding farms and only 2 percent of slaveholding farms.

⁴⁶Ibid., p. 181.

They produced little for commercial sale, but made great effort to produce nearly all the commodities required for home consumption.⁴⁷

Killebrew described the typical self-sufficient farm of East Tennessee:⁴⁸

It is not uncommon on a small farm to see a patch of cotton, which the women of the household work into cloth; a spot given to tobacco for home consumption; a field of sorghum from which syrup is made for domestic use; a few acres of wheat are raised for flour; corn and oats or hay to feed the stock, which usually consist of a few sheep to supply wool for winter clothes, cows from which a considerable revenue is derived by the manufacture of butter, and a brood-mare or two from which the farmer rears his mules and horses for farm use. Besides these, an abundance of the standard vegetables, such as cabbage, beans, peas, potatoes and onions, is raised, as well as of ducks, chickens, geese, guinea-fowls, peafowls, &c. A few bee-hives, and an apple and peach orchard, are the necessary adjuncts to nine-tenths of the farms in East Tennessee. The most striking fact in the farming operations of that division, is that no money crop, so-called, is raised. Tobacco, cotton, corn and hay are all grown in small quantities, not so much for sale as for use.

The self-sufficient character of the East Tennessee economy during the early post-Civil War period was discussed by Leonard W. Brinkman, who found that the concentration of home manufactures in the southern Appalachians became more evident between 1840 and 1870.⁴⁹ Most farmers did, however, purchase a few commodities not

⁴⁷ J. B. Killebrew, An Introduction to the Resources of Tennessee (Nashville, Tennessee: Tavel, Eastman and Howell, 1874), pp. 351, 353.

⁴⁸ Ibid., p. 353.

⁴⁹ Leonard W. Brinkman, "Home Manufacturing as an Indication of an Emerging Appalachian Subculture, 1840-1870," West Georgia College Studies in the Social Sciences, Geographic Perspectives in Southern Development, Vol. 12, June 1973, pp. 50-58.

produced on their farms--primarily salt, coffee, and sugar--from neighborhood stores. Such purchases were not paid for with cash, but through a barter system in which feathers, eggs, chickens, dried fruit, butter, and other items produced on the farm were traded for the desired store commodities.⁵⁰ Evidence of the persistence of the barter system is also provided in East Tennessee newspaper advertisements during the 1870s. For example, The Republican of Maryville on February 26, 1870 contained several advertisements offering goods to readers in exchange for cash or farm commodities.⁵¹ Edmund Cody Burnett, recalling his youth in Cocke County, Tennessee, gave further evidence of the pervasiveness of the barter system:⁵²

The shingle makers sold their shingles to the Big Creek storekeepers and took in exchange such good as they desired or were obtainable. Cash transactions were almost unknown. Money was so scarce that even the fairly well-to-do often had difficulty in paying their taxes. Almost

⁵⁰Killebrew, op. cit., p. 354.

⁵¹The Republican (Maryville, Tennessee), February 26, 1870. The advertisements included the following statements:

- (1) "I have a large lot of Leather, such as Sole, Upper, Kip, Calf, Goat Skins . . . which I will exchange for Bark, Hides, Corn, Bacon, &c."
- (2) "Wanted! Wanted! Old Iron, dry bones, and rags, for which the market price will be paid in merchandise and all kinds of tin ware."
- (3) "SASH, BLINDS, DOORS, Mouldings, Tables . . . Window and Doro Frames . . . Job Turning and Sawing . . . Good Lumber, such as Pine, Poplar, Walnut, Gum, and Cherry, taken in exchange."
- (4) "NEW FALL and WINTER GOODS . . . FOR CASH or PRODUCE."

⁵²Edmund Cody Burnett, "Shingle Making on the Lesser Waters of the Big Creek of the French Broad River," Agricultural History, Vol. 20 (1946), pp. 232-233.

the entire business of the stores was done by barter . . . The shingle maker purchased on credit and later paid the account in shingles, sometimes supplemented by eggs, feathers, and chickens.

The self-sufficient economy described above was dominant in Blount County for much of the nineteenth century. Thomas I. Saunders indicated that the traditional way of life in Blount County persisted in 1880.⁵³ He stated that the people "dress plainly, go to church regularly; and deal honestly with each other. They live on farms; their sons inherit and live there after them, and the tendency is for one generation to assume and perpetuate the habits of that immediately preceding it. The spinning wheel and the loom are seen in their houses, however, well to do they may be."⁵⁴

A. Randolph Shields, who grew up in the mountains of Blount County in Cades Cove, has written an excellent account of self-sufficient living in his native cove.⁵⁵ The characteristics of rural life in Cades Cove, as described by Shields, are believed to be typical of life in most interior parts of Blount County during the past century. According to Shields:⁵⁶

Each family provided for its own needs. Separated from the main American marketplace, people here had little use for cash in the day-to-day life of the cove. They

⁵³Thomas I. Saunders, "Letter from East Tennessee," The United Presbyterian, March 25, 1880, p. 202.

⁵⁴Ibid.

⁵⁵Shields, op. cit., pp. 18-37.

⁵⁶Ibid., p. 18.

depended upon themselves and their neighbors for the food and few comforts they enjoyed. Each person in the family, young and old alike, shared in maintaining the household. Work was central to the family life of these mountain people.

Although most antebellum Blount County farms were self-sufficient units that did not produce large surpluses for market, there were some commercial farms in the county. A few farmers, especially valley farmers living along the Tennessee and lower Little rivers, operated relatively large farms producing considerable surpluses for off-farm sale. These valley farms, some of which could be considered plantations, were different from the yeomen farms of the county, and as Killebrew noted, they "resemble the best farms of Middle Tennessee."⁵⁷

Much of the commercial activity centered on the town of Louisville, a port on the Tennessee River.⁵⁸ Louisville became an important port after 1828, when steamboat navigation was developed on the river. From about 1835 until the Civil War Louisville was the dominant economic center in Blount County, as river

⁵⁷Killebrew, op. cit., p. 355.

⁵⁸The Tennessee River begins at Knoxville at the confluence of the Holston and French Broad rivers, and flows southward through East Tennessee. In the nineteenth century, however, the name Tennessee River was only used south of where the Little Tennessee River empties into the stream. Between Knoxville and the Little Tennessee River the stream was called the Holston River. Thus Louisville was a port on the Holston River during the nineteenth century.

transportation provided the area with access to Alabama markets as well as far away markets such as New Orleans.⁵⁹

Wheat was the most important commercial crop in East Tennessee before the Civil War. Lewis Cecil Gray stressed wheat's importance as a commercial crop in the 1850s:⁶⁰

It was the principal market crop of east Tennessee, which enjoyed a limited market for its flour in northern Alabama . . . The extension of railway lines from the coast to Knoxville and building of the Nashville and Chattanooga Railroad made it possible to transport the grain to coastal cities that had hitherto imported from the North.

Many of the valley farmers also differed from the yeomen farmers in terms of the types of houses they lived in. From the late eighteenth and to the mid-nineteenth century the great majority of the farmers in the county lived in log houses, which varied from small one-room, one-story structures to large two-story buildings with several rooms. As commercial activities began to develop and some farmers began to prosper, the affluent ones began to build frame and sometimes brick houses, especially during the 1840s and 1850s.

The pre-Civil War frame and brick houses are associated with the relatively wealthy valley farmers close to the Tennessee River.

⁵⁹A. H. Love, "The History of Louisville, Blount County, Tennessee" (Manuscript in Special Collections, University of Tennessee Library, written 1922).

⁶⁰Lewis Cecil Gray, History of Agriculture in the Southern United States to 1860, Vol. II (Gloucester, Massachusetts: Peter Smith, 1958), p. 816.

Some valley farmers, however, continued to live in log houses until after the Civil War. It can be concluded that log dwellers represented all segments of the farm community from the wealthy to the landless, whereas frame and brick dwellings were only associated with a select group of farmers, or town dwellers or others with access to sawmills.

This conclusion is supported by data from the Eighth Census of the United States (1860). Heads of families who live in frame and brick houses own real estate and personal property valued at considerably more than the average figures for heads of families living in log houses (Tables 2 and 3). The data also show that log house dwellers represent not only yeomen farmers with moderate wealth, but also the relatively wealthy and the poor.

IX. SUMMARY

Most of the houses built in Blount County before 1880 were log structures, and prior to the Civil War, an overwhelming majority of the county's dwellings were log. During the era of log construction certain conditions existed in the county that gave log construction advantages over frame construction.

The construction of a log house was inexpensive and relatively easy. The expense of construction was slight because timber was abundant on the farm, labor was furnished by family members and neighbors, and few, if any, construction materials had to be purchased. Dwelling construction was usually a cooperative effort on

TABLE 2

VALUE OF REAL ESTATE AND PERSONAL PROPERTY FOR FRAME AND
BRICK HOUSE DWELLERS IN BLOUNT COUNTY IN 1860

Name	Occupation	Value of Real Estate in Dollars	Value of Personal Property in Dollars
Thos. McCullough	Farmer	\$10,000	\$ 2,300
Richard Kirby	Farmer	5,000	7,000
Sally Martin	Farmer	5,000	7,500
Stephen S. Porter	Farmer	25,300	16,750
Jas. Porter	Farmer	20,000	10,000
Alex. McNutt	Farmer	15,000	10,000
Robert Pickens	Farmer	3,500	3,700
J. S. George	Farmer	18,000	18,000
	Mean:	<u>12,725</u>	Mean: <u>10,106</u>

Source: Eighth Census of the United States, 1860, Manuscript Schedules of Population for Blount County.

TABLE 3

VALUE OF REAL ESTATE AND PERSONAL PROPERTY FOR LOG HOUSE
DWELLERS IN BLOUNT COUNTY IN 1860

Name	Occupation	Value of Real Estate in Dollars	Value of Personal Property in Dollars
Archibald Hitch	Farmer	\$2,000	\$ 200
Alexander Duncan	Farmer	5,000	3,000
Thomas Clark	Farmer	4,000	4,000
Edward Wilkerson	Farmer	1,500	4,500
Newton McConnell	Farmer	1,500	1,200
James Grindstaff	Farmer	2,000	450
Alfred McConnell	Farmer	8,000	4,600
Daniel Headrick	Farmer	3,000	1,200
Robt. Everett	Farmer	800	350
James Waters	Farmer	3,000	1,200
Josiah Gamble	Farmer	5,000	1,000
Jacob Tipton	Farmer	600	1,000
Eli Garner	Farmer	500	1,000
Asa Rogers	Farmer	1,500	550
Jesse Milsaps	Tenant	0	500
Aaron Burns	Tenant	0	800
Eliza Hatcher	Farmer	2,500	1,500
Sam Lane	Farmer	400	225
Richard Burns	Farmer	2,000	2,500
Eliza Oliver	Farmer	500	340
John Oliver	Farmer	500	500
Peter Cable	Farmer	1,200	1,225
Daniel Losson	Farmer	2,000	1,600
Mean:		2,109	Mean: 1,410

Source: Eighth Census of the United States, 1860, Manuscript Schedules of Population for Blount County.

the part of a farmer and his neighbors, and good log pen could be erected in a single day.

Some frame houses were constructed during the frontier period, but not without considerable expense and difficulty. Difficulty in obtaining sawn lumber because of lack of access to sawmills was one of the most important reasons residents of Blount County continued to build log houses decades after the initial settlement period. The transportation of logs, weighing several hundred pounds each, to mills only a short distance away was a difficult task for a farmer, who in most cases, did not have adequate animals or equipment to easily convey logs to the mill.

Another reason for a farmer's decision to erect a log house was the nature of frame construction during at least the first two-thirds of the nineteenth century. The prevalent type of construction was the timber frame, which consisted of a series of large wall posts and beams supported by equally substantial braces. Expert carpentry skills were needed to erect the frame because the posts, beams, braces and studs were interconnected by mortises, tenons, and pegs, and all members were often hand-hewn. Whereas a good log house could be completed in a very short time, a timber frame house sometimes took several years to complete. The problem of constructing the timber frame house apparently was exacerbated by a scarcity of carpenters in Blount County, particularly in more isolated areas.

The cost of construction of a frame house was considerably more than for a log house, and the prevalent East Tennessee economy hindered the farmer's ability to pay for the cost of building a frame dwelling. The economy that developed in East Tennessee during the nineteenth century was a self-sufficient agricultural economy, and most farmers were non-slaveholding yeomen farmers who owned small farms and worked them with their families. They produced nearly everything they consumed and did not go lacking in the basic necessities of life, but they sold few products off the farm. Such an economy did not generate for most farmers the capital required to purchase construction materials for a frame house or to hire a carpenter to build the structure.

Although most antebellum Blount County farms were self-sufficient units that did not produce large surpluses for market, there were some commercial farms in the county. A few farmers, especially valley farmers living along the Tennessee and lower Little rivers, operated relatively large farms which produced surpluses for off-farm sale. It was some of these relatively wealthy farmers, along with town merchants, who built the bulk of the antebellum non-log houses.

CHAPTER VI

SOCIOECONOMIC FACTORS AND THE DECLINE OF LOG HOUSE CONSTRUCTION

I. INTRODUCTION

Pre-Civil War frame and brick houses were associated with relatively wealthy Blount County farmers who were probably more commercially oriented than other farmers. It is logical to hypothesize that the shift from log to frame construction during the latter part of the nineteenth century was associated with increased wealth gained by farmers who had begun to produce greater surpluses for off-farm sale than in the past. This chapter will assess the role of commercial agriculture in the shift from log to frame construction, and will examine the relationship between wealth and other builder characteristics and house construction in Blount County. In addition, the chapter will seek to determine if there is evidence of a social stigma associated with living in a log house in East Tennessee during the nineteenth century.

II. COMMERCIAL AGRICULTURE AND HOUSE BUILDING

Blount County's frame and brick house owners before the Civil War were affluent farmers, and they were probably more commercially oriented than the typical yeomen farmers, who lived in log houses. It is hypothesized that the shift to frame construction during the latter part of the nineteenth century was the result of a broad

shift by the county's farmers to commercial agriculture. If farmers were more commercially oriented, they would accumulate more money, some of which could be used to pay for the construction of frame houses.

An examination of census of agriculture data does not indicate that agricultural production at the turn of the century was significantly greater than during the antebellum period. There was an absolute increase in the number of improved acres of agricultural land from 1850 to 1900, but a considerable decline in the number of improved acres per farm. Corn, wheat, and oats were the three traditional field crops of East Tennessee, but only wheat production increased significantly by 1900. Wheat acreage, however, declined on a per-farm basis between 1860 and 1900.¹

Livestock production was an important source of revenue for East Tennessee farms in the nineteenth century. The total number of animals grown, however, decreased in Blount County from 1860 to 1900. Sheep and swine suffered great losses, but beef cattle did experience significant gains in production.²

Rather than exhibiting great increases in commercial agriculture during the post-war period, it appears that, at best, Blount County began to approach pre-Civil War levels of production during

¹U. S. Census of Agriculture, 1850, 1860, 1870, 1880, 1890, and 1900.

²*Ibid.*

the latter part of the century. The post-bellum agricultural situation in Blount County appears to parallel that of the state as a whole. According to Thomas H. Freeman, Tennessee agriculture "did not regain its losses nor reach its pre-Civil War level until 1900."³

There was, however, considerable surplus production and commercial agricultural activity in Blount County after the Civil War, particularly from the late 1870s until the turn of the century. Thomas I. Saunders indicated in 1880 that Blount County farmers produced "enough to live on and a good deal to export," and, according to Durwood Clay Dunn, prosperity had returned to the agricultural economy of mountainous Cades Cove by the 1880s.⁴

Railroad construction may have stimulated the development of commercial agriculture in parts of Blount County during the latter half of the nineteenth century. A rail line connecting Maryville with Knoxville was completed in 1868 and another, running parallel to the Tennessee River through the western part of the county, was constructed in 1890.⁵ These railroads connected Blount County with

³Thomas H. Freeman, An Economic History of Tennessee (Nashville: Tennessee State Planning Commission, 1965), p. 25.

⁴Thomas I. Saunders, "Letter From East Tennessee," The United Presbyterian, March 25, 1880, p. 202; Durwood Clay Dunn, "Cades Cove During the Nineteenth Century," unpublished Doctoral Dissertation, The University of Tennessee, Knoxville, 1976, pp. 60, 64.

⁵Inez E. Burns, History of Blount County, Tennessee (Nashville: Benson Printing Company, 1957), pp. 235-237.

northern and southern markets and may have provided incentive for farmers with access to them to concentrate on crop production for off-farm sale. It is possible that some farmers accumulated enough money through newly developed commercial agriculture to replace their log houses with frame structures.

The above statements are speculative, however, because the railroads may have brought about a shift from river to rail transportation of agricultural commodities, but not caused an increase in overall agricultural production. Support for such an occurrence is provided by A. H. Love, who indicated in 1922 that the port of Louisville, Tennessee had suffered economic disaster as a result of railroad construction through the town:⁶

. . . the writer wishes again to touch on the shipping business on the river . . . great changes have taken place. The wharf and warehouses are gone; the steam-boat business is a relic of the past . . . We have the railroad, but what benefit have we derived from its coming? We won't say the railroad caused it, but our town is not the town it once was by several hundred percent. . . .

Although agricultural production did not greatly exceed, if at all, its pre-Civil War levels, frame house building increased tremendously. Not only did the affluent build frame houses as before the war, but many yeomen farmers built frame dwellings during the 1880s and 1890s and relatively poor farmers were erecting frame

⁶A. H. Love, "The History of Louisville, Blount County, Tennessee" (Manuscript in Special Collections, University of Tennessee Library, written 1922), p. 12.

residences in the 1890s. Commercial agriculture was responsible for the accumulation of capital needed to build some frame houses, but it was not responsible for the construction of frame dwellings by the general populace.

III. CHARACTERISTICS OF HOUSE BUILDERS

An examination of the manuscript returns of the Ninth Census of the United States, 1870 reveals certain differences between 14 men identified as frame house builders during the 1870s and 14 men who erected log dwellings during that decade. Frame house builders tended to be older and wealthier than log house builders, although most of the frame house builders were not as wealthy as their pre-Civil War counterparts (Tables 4 and 5).⁷

Ages of log house builders ranged from 21 to 61 years. Nine of the 14 were in their 20s at the time of dwelling construction, and the average of the group was 31 years. The 14 frame builders ranged in age from 27 to 54 and had a mean age of 37 at the time the structures were built (Tables 4 and 5).⁸

Eight of the fourteen log builders were either tenant farmers or farm laborers in 1870, although they probably owned land at the time their houses were constructed. Three were not listed in the census and two of those are known to have moved to the county after

⁷Ninth Census of the United States, 1870, Manuscript Schedules of Population for Blount County.

⁸Ibid.

TABLE 4
CHARACTERISTICS OF BLOUNT COUNTY FRAME HOUSE BUILDERS DURING THE 1870s

	Construction Date	Age of Builder At Time of Construction	Occupation Of Builder In 1870	Value of Builder's Real Estate In 1870	Value of Builder's Personal Property In 1870
1	ca. 1878	28	Farm Laborer	----	----
2	ca. 1870	38	House Carpenter	\$1000	\$600
3	ca. 1875	36	Farmer	\$500	\$150
4	1873	29	Farmer	\$8000	\$2423
5	1874-1876	ca. 33	Farm Laborer	----	----
6	1875-1879	ca. 30	Farmer	\$1500	\$950
7	ca. 1870	53	Farmer	\$350	\$300
8	ca. 1875	40	Physician	----	----
9	1876	29	Farm Laborer	----	\$300
10	1874-1876	ca. 36	Farmer	\$4000	\$500
11	ca. 1877	54	Farmer	\$4000	\$1100
12	ca. 1875	40	Wagon Maker	----	----
13	1875	27	Farm Laborer	----	----
14	ca. 1870	40	Physician	\$3000	\$1500

Source: Ninth Census of the United States, 1870, Manuscript Schedules of Population for Blount County.

TABLE 5
CHARACTERISTICS OF BLOUNT COUNTY LOG HOUSE BUILDERS DURING THE 1870s

	Construction Date	Age of Builder At Time of Construction	Occupation Of Builder In 1870	Value of Builder's Real Estate In 1870	Value of Builder's Personal Property In 1870
1	ca. 1875	ca. 32	Not Living In County	----	----
2	ca. 1873	28	Tenant Farmer	----	\$400
3	1870-1875	ca. 32	Tenant Farmer	----	----
4	ca. 1875	26	Tenant Farmer	----	\$300
5	ca. 1873	26	Living With Parents; Probably Farm Laborer	----	----
6	1870-1875	ca. 24	Not Listed In 1870 Census	----	----
7	ca. 1870	28	Tenant Farmer	----	----
8	1870-1875	ca. 27	Farm Laborer	----	\$500
9	1870-1875	ca. 26	Farm Laborer	----	----
10	ca. 1875	61	Not Living In County	----	----

TABLE 5 (CONTINUED)

	Construction Date	Age of Builder At Time of Construction	Occupation Of Builder In 1870	Value of Builder's Real Estate In 1870	Value of Builder's Personal Property In 1870
11	1870-1872	ca. 26	Farm Laborer	----	----
12	ca. 1878	ca. 21	None, 13 Years Old	----	----
13	1870s	ca. 45	Farmer	\$800	\$400
14	1876	34	Farmer	\$300	\$600

Source: Ninth Census of the United States, 1870, Manuscript Schedules of Population for Blount County.

1870. Two were landowning farmers and the other was a minor, 13 years old in 1870 (Tables 4 and 5).⁹

Eight of the fourteen frame house builders owned property and another, a physician, was probably relatively affluent at the time his frame house was erected. In addition, one of the builders was a landless wagon maker with considerable personal property in 1870 (Table 5).¹⁰

In the 1880s differences in the ages of frame and log house builders were more pronounced than in the 1870s. The average age of 31 frame builders was 36 years, or about the same as during the 1870s. In addition to the 31 builders identified during the building survey, an examination of Blount County newspapers of the 1880s revealed the names of numerous house builders, all believed to have erected frame or brick dwellings. Ages were determined for 20 of those builders, with the average being 37 years, virtually the same as for the group previously identified. The average ages of 12 log house builders, however, dropped to 27 years, and nine of the 12 were younger than 30 years old at the time their residence was constructed.¹¹

By the 1880s non-affluent yeomen farmers were building frame houses. Field interviews and census information revealed that log

⁹Ibid.

¹⁰Ibid.

¹¹Ibid.

houses were being erected in the 1880s by younger farmers, usually relatively poor and recently married. The log structures might be considered "starter" houses, to be enlarged, usually with a frame addition, as the farmer's family grew larger and as he accumulated more wealth.

In summary, frame and brick houses before the Civil War were built by affluent farmers and log structures were erected by all segments of the population, ranging from the very poor to the relatively affluent. After the Civil War, especially by the mid-1870s, frame house construction was not limited to the affluent class, but young farm families still might build a log structure as a "starter" house.

IV. THE SOCIAL STIGMA OF LIVING IN A LOG HOUSE

Terry Jordan has attributed the decline of log construction in Texas at least in part to a social stigma. He stated:¹²

Log houses became symbols of the frontier, of backwardness, of deprivation. Status could be gained by discarding the log house and replacing it with one of frame, brick, or stone. At the very least, socially upward-mobile folk were expected to conceal the logs with milled siding.

There is evidence that some East Tennesseans were not content to live in log dwellings. The Cobb-Massengill log house, built ca. 1770-1772 and which served as the first capitol of the Territory of

¹²Terry G. Jordan, Texas Log Buildings (Austin: University of Texas Press, 1978), p. 5.

Tennessee, remained virtually unchanged until the late nineteenth century. At that time, however, the daughters of owner William Allen Massengill had reached "courting age" and "were too embarrassed to live in a log house." The owner weatherboarded the house to allay his daughters' embarrassment.¹³

It can be assumed that some of the rural elite of Blount County were not content to live in log dwellings, even during the pioneer period. Some of them built frame or brick houses as soon as they were able and abandoned their log structures. James Campbell McConnell built a two-story brick house near Meadow during the first decade of the nineteenth century to replace a log house.¹⁴ James Henry, of the Brick Mill community, went to great effort to build an elegant two-story brick house, which replaced a log house in the early 1830s. Henry and his brother-in-law, carpenter Buck Lattimore, "took wood cutters and went by wagon to Virginia to secure patterns for the new house." Some of the wood used in construction of the house was sawed in Virginia and hauled to Blount County.¹⁵

¹³Pauline Massengill DeFriece and Frank B. Williams, Jr., "Rocky Mount: The Cobb-Massengill Home, First Capitol of the Territory of the United States South of the River Ohio," Tennessee Historical Quarterly, Vol. 25 (1966), pp. 119-134; quote is on p. 131.

¹⁴Louise Langstrath Messler, "Cloyd's Creek," Maryville Times, June 8, 1942.

¹⁵Adele McKenzie, "At Brick Mill--Six Generations of Henrys," Maryville-Alcoa Daily Times, February 25, 1972.

Some members of the rural elite were unable to or simply made no effort to "escape" from their log houses for many years before the Civil War. Yeomen farmers apparently made little effort to build frame houses until after the Civil War. Killebrew, writing in 1874, lamented the poor status of housing in East Tennessee. In describing conditions in Sequatchie County, for example, he stated that there was "almost total neglect in removing the ancient houses erected by the early settlers, and building more desirable ones."¹⁶

It is possible that the writings of public officials such as Killebrew, Secretary of the Tennessee Bureau of Agriculture, caused some people to feel that log houses were undesirable living quarters. Local newspaper editors also may have influenced the attitudes of East Tennesseans during the period of decline in log house construction. One Blount County editor appears to have designated himself the county "change agent" for the 1880s. He was continually exhorting residents to make improvements to their property, apparently in an effort to make the county more attractive to outside investors. In one such appeal, he makes it clear that log houses were not desirable, but might be tolerated if certain improvements were made:¹⁷

¹⁶J. B. Killebrew, An Introduction To The Resources of Tennessee (Nashville: Tavel, Eastman and Howell, 1974), p. 608.

¹⁷Maryville Times, November 9, 1887. The newspaper editor appears to be promoting the "New South" industrial development philosophy which advocated industrialization based on local resources and labor and outside capital. A discussion of the New South philosophy and its impact on Appalachia is provided in Ronald D. Eller, Miners, Millhands, and Mountaineers: Industrialization of the Appalachian South, 1880-1930 (Knoxville: University of Tennessee Press, 1982), pp. 39-85.

Farmers, build nice fences around your homes, and if you can't paint them, whitewash them. Even log houses with good whitewashed fences gives homes a cheerful aspect, and that is what we want.

The addition of numerous rural post offices and an increase in the frequency of mail delivery during the latter part of the nineteenth century made it easier for Blount Countians to learn about conditions outside the area. Twenty-four post offices were added in the county during the 1880s and 16 during the 1890s.¹⁸ The mail brought newspapers and magazines to even the most isolated parts of the county. Newspapers and magazines did not introduce frame houses to the general populace because a few frame houses were present in nearly all communities by the 1880s. Illustrations of and advertisements for modern houses, however, may have contributed to the yeomen farmer's desire to build a frame house to replace his log residence.

It is difficult to assess to what extent there was a social stigma experienced by most Blount Countians who live in log dwellings. It seems reasonable to assume that there was such a stigma among the affluent before the Civil War, and that it gradually spread among the lower socioeconomic classes as more people built frame houses after the war. Even if there was a stigma associated with living in a log house, most families were unable to overcome the stigma, by building a frame house, before the 1880s or

¹⁸Inez E. Burns, History of Blount County, Tennessee (Nashville, Tennessee: Benson Printing Company, 1957), pp. 323-324.

1890s. Stigma or not, certain conditions had to change before Blount County farmers erected frame houses or covered their log residences with siding.

V. SUMMARY

Frame house construction rapidly replaced log construction during the late nineteenth century. The shift to frame construction was not symbolic of a great increase in commercial agriculture in the county, nor was it associated only with relatively wealthy Blount Countians. In fact, by 1890 frame construction represented virtually all segments of the rural community. Many Blount Countians may have considered it socially unacceptable to live in a log house by the end of the last century. If, however, the typical Blount County farm family considered it demeaning to live in a log house, certain conditions had to change before most farmers erected frame houses. The next two chapters will assess the influence of other factors in bringing about the decline of log house construction.

CHAPTER VII

SAWMILLING AND LUMBERING AND THE DECLINE OF LOG HOUSE BUILDING

I. INTRODUCTION

The shift from log to frame construction between the 1870s and 1900 is associated with changes in sawmilling and the rise of commercial lumbering in Blount County. The difficulty of obtaining sawn lumber before the 1870s resulted largely from lack of access to sawmills. Greater access to lumber was made possible by an increase in the number of sawmills in the county and the advent of the portable sawmill. The changes in sawmilling, however, would not have occurred so rapidly without a significant increase in commercial lumbering. This chapter describes the relationship between changes in sawmilling and commercial lumbering and the rise of frame house construction and the concomitant decline in log house building.

II. THE ROLE OF SAWMILLS

Increase in Number of Sawmills

Several authors have attributed the decline of log construction and the rise of frame construction to the diffusion of sawmills. Ronald D. Eller stated that in Appalachia "frame houses were made increasingly feasible by the construction of neighborhood

sawmills," and Wilbur Zelinsky asserted that "the multiplication of sawmills made frame construction feasible even for the poorest classes."¹

It is not possible to determine how many sawmills were operating in Blount County during the post-Civil War period because the Ninth Census of the United States: 1870 and the Tenth Census of the United States: 1880 probably understated the number of sawmills. In addition, census data on sawmills are missing for 1890 and 1900. Killebrew provides evidence that there were more sawmills in Blount County than reported by the censuses. According to the census, there were nine sawmills in the county in 1870, and only eight were listed in the census for 1880.² Killebrew, however, reports that twenty-three mills were in operation in the early 1870s.³

Even though sawmill numbers cannot be accurately presented, there is evidence that the number of Blount County sawmills increased greatly during the 1880s and 1890s when the transition from log to frame construction was most pronounced. Data compiled from

¹Ronald D. Eller, Miners, Millhands, and Mountaineers, Industrialization of the Appalachian South, 1880-1930 (Knoxville: University of Tennessee Press, 1982), p. 26; Wilbur Zelinsky, "The Log House in Georgia," Geographical Review, Vol. 43 (1953), p. 181.

²Ninth Census of the United States: 1870 (Washington: 1872) and Tenth Census of the United States: 1880 (Washington: 1883).

³Killebrew, op. cit., p. 463.

various sources, including censuses, newspapers, books, and journals, show that at least 40 sawmills were in operation in the county during the 1880s. By 1897 the number increased to at least 52, and the distance rural residents had to travel to mills to have logs converted to planks decreased considerably.⁴ Thus the increase in number of sawmills facilitated the construction of frame houses in the county.

The Role of Portable Steam-Powered Circular Sawmills

More important than the absolute increase in number of sawmills in Blount County was the advent of the portable steam-powered circular sawmill, which had by 1872 "almost entirely superseded the reciprocating mills" in the United States "except at lumber centers with a large amount of manufacturing."⁵ Although portable sawmills had not superseded water-powered sash mills in Blount County by 1872, they became dominant during the 1880s at the same time that frame house construction was rapidly expanding.

⁴Compiled from Tenth Census of the United States: 1880; Inez E. Burns, History of Blount County, Tennessee (Nashville: Benson Printing Company, 1957), pp. 221-222, 229-231; Robert S. Lambert, "Logging on the Little River, 1890-1940," East Tennessee Historical Society's Publications, No. 33 (1961), pp. 32-42; various issues of Northwestern Lumberman (Chicago); Blount County Democrat (Maryville); The Watchman (Maryville); East Tennessee News (Maryville); Maryville Times; Maryville Index.

⁵J. Richards, A Treatise on the Construction and Operation of Woodworking Machines (London: E. & F. N. Spon, 1872), edited selections in Forest History, Vol. 9, No. 4 (January 1966), pp. 16-23; quote is from p. 22.

The circular saw was invented in England in the eighteenth century and introduced into the United States in the early part of the nineteenth century, but did not make a great impact until its design was greatly improved in the middle of the nineteenth century.⁶ The use of steam power to turn the circular saw occurred early in the nineteenth century, but was at first confined to stationary sawing activities. Since the steam-powered circular sawmill could saw a log much faster than the water-powered sash sawmill, development of the portable steam-powered circular sawmill had a great impact on rural areas of East Tennessee.

J. Richards, writing in 1872, described a typical portable steam-powered sawmill:⁷

The circular sawmill of Lane and Bodley [a popular Cincinnati model] . . . is a fair sample of this peculiar mill. The framing in which the machinery is mounted is of iron; the carriage rails and supporting sills are of wood. No foundation is needed beyond a few cross ties. The engine for driving the mill is mounted on trucks, and the whole is strictly portable . . . The feed and supply pumps, shafts, pillow blocks, and all parts of the engine are mounted on the boiler, which is multiflued and has a rectangular fire box large enough to receive slab wood four feet long. The exhaust is carried into the smoke stack, creating a sufficient draught to burn the sawdust which forms the greater share of the fuel.

⁶Nathan Rosenberg, "America's Rise to Woodworking Leadership," in Brooke Hindle, editor, America's Wooden Age: Aspect of Its Early Technology (Tarrytown, New York: Sleepy Hollow Restorations, 1975), p. 46; Norman Ball, "Circular Saws and the History of Technology," Bulletin of the Association for Preservation Technology, Vol. 7, No. 3 (1975), pp. 80, 84.

⁷Richards, op. cit., p. 22.

Blount County newspapers occasionally carried notices of sawmill sales in the latter part of the nineteenth century. The following advertisement, which appeared in The Republican on May 30, 1874, provides a description of a portable steam-powered circular sawmill, probably typical of those operating in the county at that time:⁸

FOR SALE

A first-class steam saw mill, located on Baker's Creek, one mile from Brick Mill, Blount County, Tenn. Said Mill has 54 & 30 inch circular saws, 25 horse power portable engine and boiler, all in good order; the best head blocks in this part of the State. This mill, with 4 hands, is capable of cutting 4000 to 7000 feet of lumber per day. Cause of selling, poor health.

The two saws mentioned in the advertisement were common for portable circular sawmills. One of the disadvantages of early circular mills was that they could only cut through logs with a diameter half the diameter of the circular saw. A feature of portable sawmills, however, was the simultaneous use of two circular saws, one above the other, cutting in the same kerf. The use of two saws greatly increased the size of logs that could be sawed.

The great advantage of the portable sawmill was that it was transported to the site of the timber to be cut, rather than the timber being transferred to the mill for sawing. The first portable sawmill in Blount County may have been owned by Jesse Kerr, Jr., of Louisville. Kerr, Jr. purchased a sawmill in 1858 and

⁸The Republican (Maryville), May 30, 1874.

wrote about its performance shortly after buying the mill:⁹

I set it up on a small stream that afforded constant water about as thick as my little finger, which was much more than sufficient to supply the boiler. We are able to cut 3,000 feet of beautiful lumber in 12 hours, with something less than one cord of wood. It is the very thing we have so much needed in our country for a long time. With a little trouble and expense, we are able to move it from five to ten miles per day, and set it up in the heart of the timbers, which saves the great burden of hauling the logs a long distance to the mill.

The steam-powered portable sawmill probably first arrived in East Tennessee during the 1850s, although stationary steam powered mills likely appeared earlier.¹⁰ Advertisements for circular sawmills and portable steam engines appeared in Knoxville newspapers in the early 1850s, and as early as December 1854, the Knoxville Iron Company was manufacturing stationary and portable steam engines and circular sawmills.¹¹ Advertisements for portable sawmills continued to appear in local newspapers until at least the turn of the century.

A few portable sawmills were operating in East Tennessee during the 1850s, but they were not common until after the Civil War. The number of such mills increased during the 1870s, but not rapidly until the 1880s. In 1874 Killebrew stated that there were

⁹East Tennessee (Maryville), February 19, 1858.

¹⁰A steam sawmill was in existence in Nashville some years before 1831. James Patrick, Architecture in Tennessee, 1768-1897 (Knoxville: University of Tennessee Press, 1981), p. 23.

¹¹Brownlow's Knoxville Whig and Independent Journal, December 16, 1854.

three steam sawmills in the county, "cutting in the aggregate, from fifteen to twenty thousand feet per day."¹² There is no proof that the three mills were portable units, but they are believed to have been.

The Tenth Census of the United States: 1880 listed four steam sawmills for Blount County and at least three of them were the portable type. One of the questions asked sawmill operators by the census taker was: "Do you do your own logging?" The answer was "No" for all the water-powered mills, but three of the four steam mill operators replied "Yes" to the question. The fourth operator did not answer the question. That the steam sawmill operators stated that they did their own logging simply means they were transporting portable sawmills to the site of the timber to be cut.

There is other evidence that the three steam sawmills were of the portable type. The Elkanah Johnson mill, headquartered on the Johnson farm at Alynwick a few miles southwest of Maryville, was burned in late May 1879, in the Cloyd's Creek area, along the Blount-Loudon county line near Greenback, and several miles from Alynwick.¹⁴ The Robert McClanahan mill, with a home site near

¹²Killebrew, op. cit., footnote 5, p. 463.

¹³Tenth Census of the United States: 1880, op. cit.

¹⁴Meade Milton Johnson, Southern Families: The Descendants of Elkanah and Catherine Johnson (New Canaan, Connecticut: Meade Milton Johnson, 1977), pp. 7-8; Maryville Index, June 4, 1879; The Watchman (Maryville), April 19, 1882.

Rockford, was reported to be cutting timber in Sevier County in 1904.¹⁵ Older residents of the Louisville area agree that the James Henry Mill, headquartered in the Holston College area west of Louisville, was a portable one. According to Ethel Cox Smith, the Henry mill was brought to her grandfather's farm about 1871 to cut timber to build the house in which she now resides.¹⁶ J. E. Prater, 103 years old, recalls the Henry sawmill being brought to the property of his father, "Buffalo" Jim Prater, to cut stands of pine and chestnut in the late 1880s.¹⁷

Additional evidence of portable sawmill activity has been gathered for the 1870s. For example, Mrs. W. O. Laffell, granddaughter of M. B. Warren, who built the house in which she now resides near Louisville, stated that a sawmill was brought to the Warren farm to cut planks for the construction of the house, erected during 1874-1877.¹⁸ The time of construction of the Warren house is confirmed in an 1878 newspaper article in which M. B. Warren was reported to have recently completed "a most neat and convenient

¹⁵Maryville Times, March 24, 1886; Maryville Record, July 22, 1904.

¹⁶Ethel Cox Smith, Louisville, Tennessee, personal interview, June 1984.

¹⁷J. E. Prater, Louisville, Tennessee, personal interview, June 1984.

¹⁸Mrs. W. O. Laffell, Louisville, Tennessee, personal interview, June 1984.

dwelling house" containing 14 rooms.¹⁹ The sawmill used to cut timber on the Warren farm may have been the James Henry mill, mentioned above, or the H. G. Mead steam mill, reported destroyed by fire near Holston College in July 1878.²⁰

During the 1880s the number of portable sawmills multiplied in the county. A sample of Blount County newspapers during the decade reveals the presence of at least 23 portable mills, and a considerably larger number is believed to have been present. Portable sawmills were so common by the end of the decade that a Maryville newspaper editor declared them to be "fashionable."²¹ During 1890-1897, the number of portable mills increased to at least 34.²²

Newspaper accounts gave proof of the portability of the mills during the 1880s and 1890s. For example, the Maryville Times of March 17, 1886 reported that "J. G. Newbert passed through town Monday with a portable engine and saw mill from Madisonville, enroute to Ellejoy, where it will be put into operation."²³ In March of 1886, the Ellejoy correspondent of the same paper reported that "Keener Bros. will move their steam saw mill from this part in a few days," and in April of the same year the Union Grove

¹⁹Maryville Index, November 20, 1878.

²⁰Ibid., July 17, 1878.

²¹Maryville Times, October 23, 1889.

²²Compiled from Maryville Times, 1890-1897.

²³Maryville Times, March 17, 1886.

correspondent wrote that "Bill Curtis will move his saw mill to this place in a few days."²⁴ In early 1894 it was reported that James Baker had moved "his saw mill from Sawyer's Creek to Cheoah," and in early 1896 D. W. Trotter's sawmill was moved to saw lumber for Crof Davis.²⁵

The period of great increase in number and activity of portable sawmills parallels the rise of frame construction in Blount County. In addition to the Cox and Warren houses previously mentioned, there are several other examples of sawmills being brought to farms to saw lumber for the construction of houses or barns. In 1888 Hugh Gamble of Ellejoy built a two-story frame house with lumber cut from his farm woods by a portable sawmill.²⁶ In 1890 a portable sawmill was brought to the farm of Samuel L. Pickens near Shooks Gap to cut timber, some of which was dried and used to erect the two-story frame house now owned by his daughter, Bessie Pickens Garrison.²⁷

The best evidence of the impact of portable sawmills on house-building was discovered for mountainous Cades Cove, where few frame houses were constructed before the turn of the century (Figure 31).

²⁴Maryville Times, March 24, 1886; April 21, 1886.

²⁵Maryville Times, January 17, 1894; February 27, 1896.

²⁶Bessie Gamble, Ellejoy, Tennessee, personal interview, April 1984.

²⁷Bessie Pickens Garrison, Seymour, Tennessee, personal interview, May 1984.

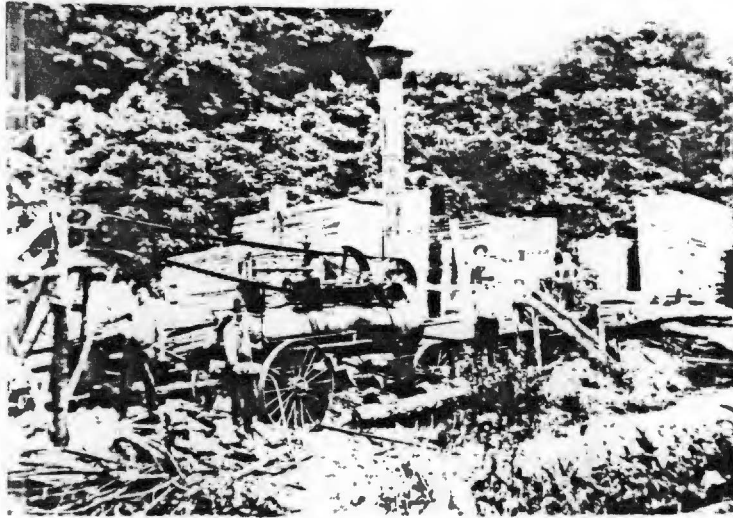


Figure 31. Portable sawmill in operation in Cades Cove during the first decade of the twentieth century. (Courtesy of Adele McKenzie, Maryville, Tennessee.)

Although a water-powered sawmill had been in operation in the cove for years, it was not until the portable sawmills arrived in Cades Cove that large numbers of frame houses were built. The role of the portable sawmill was recognized by cove native A. Randolph Shields, who stated that "Steam-powered sawmills . . . changed house structures from log to sawed lumber."²⁸

Portable sawmill activity and frame house building were brisk during the spring and summer of 1904 in Cades Cove. In May and June of that year at least four portable sawmills were in operation in the cove, including those owned by Beecher and Post; John McGill, who in early June "had his sawmill in the Cove for two weeks"; and S. L. Sparks, who in early June was sawing on Laurel Creek.²⁹ In early June 1904, the Maryville Record indicated there was a building boom in Cades Cove, reporting that "Cove people go right on building houses," and that George Myers, W. M. Feezell, and J. T. Sparks had finished construction of their residences.³⁰ The impact of the building surge extended outside Cades Cove, because in June 1904 Ellejoy carpenters W. J. Patty and J. W. Braden purchased "a new outfit of carpenter tools and machinery and are doing carpenter work in Cades Cove."³¹

²⁸A. Randolph Shields, The Cades Cove Story (Gatlinburg, Tennessee: Great Smoky Mountains National History Association, 1977), p. 58.

²⁹Maryville Record, May 20, 1904; June 3, 1904; June 10, 1904, June 24, 1904.

³⁰Maryville Record, June 3, 1904.

³¹Maryville Record, June 10, 1904.

The recollection of another Cades Cove native, Inez McCaulley Adams, provides direct evidence of the relationship between portable sawmills and frame house building in the Cove in the early part of this century, when her grandfather, John McCaulley, erected a frame house:³²

It was quite a distance from Grandpa's in any direction to any of his neighbors. When he bought this land my dad (Millard McCaulley) was only three years old. They first moved into an old log house that was on the property. They lived there ten or twelve years, or until they built the house I remembered them living in. My dad and this oldest sister, Maymie, dragged logs off the mountain with a mule and helped Grandpa build the new house. It was not a log house. They had the logs sawed into boards.

A wind storm had blown down lots of trees over a large area, near the Henry Whitehead place, and Witt Roberts had moved his saw mill there. Grandpa and Daddy hauled their logs to that mill. Bob Cable built and operated a dry kiln at the site, and Mann Ledbetter moved in a planing mill. They finished enough lumber for several houses and barns from the blown down trees, and from logs hauled to the mill from other areas.

Available evidence suggests that much of the frame house building in Blount County during the latter part of the nineteenth century was associated with the advent and diffusion of the portable circular sawmill. In more isolated areas, such as Cades Cove, there appears to have been an even stronger relationship between the appearance of portable sawmills and the construction of frame houses. From the late 1850s and until the late 1870s, portable sawmills in the county were used primarily for custom sawing, particularly for relatively affluent residents. The rapid increase

³²Inez McCaulley Adams, "Remembering: A Trip Back to Grandpa's House," in Shields, op. cit., p. 94.

in number of sawmills in the 1880s, however, was related to the rise of commercial lumbering, which also played an important role in the rise of frame house construction and the decline of log construction in the county.

III. THE IMPACT OF COMMERCIAL LUMBERING

Commercial lumbering in Blount County increased significantly during the 1880s and 1890s in response to a growing local market and northern demand for lumber.³³ The development of commercial lumbering was made possible by post-Civil War railroad construction which connected Blount County with Knoxville and remote markets.³⁴ The increased role of lumbering in the latter part of the past century coincides with the rise of frame house construction and the two phenomena are closely related.

Construction of the Knoxville and Charleston Railroad from Knoxville to Maryville in 1868 was a precursor to the rise of commercial lumbering in Blount County.³⁵ By the early 1880s considerable activity was oriented to the railroad, with principal shipping points located at Maryville and Rockford. Maryville, although a

³³Burns, op. cit., p. 230; Lumbert, op. cit., p. 33.

³⁴The history of railroad construction in Blount County is described by Burns, op. cit., pp. 235-237.

³⁵The name of the Knoxville and Charleston Railroad was changed to the Knoxville and Augusta in 1879, Burns, op. cit., p. 236.

much larger town, lagged behind Rockford as a shipping center for lumber because Rockford had the advantage of being located on the railroad as well as along the Little River. Large numbers of logs were floated down the Little River from Tuckaleechee Cove to sawmills at Rockford during the 1880s and 1890s.³⁶ Much of the activity along the Little River was carried out by northern companies which shipped large amounts of yellow poplar to the East and Middle West.³⁷ In other parts of the county lumber was sawed at mills, particularly portable mills, and transported on horse-drawn wagons to Rockford and Maryville for shipment to Knoxville by rail.

Newspapers of the 1880s also provide evidence of the increased role of commercial lumbering in the county during that decade. In April 1882, for example, M. B. Gaddis placed an advertisement in a Maryville newspaper seeking sixteen teams for hauling logs and lumber.³⁸ In June of the same year it was reported that the lumber business was "on the increase" in the county, and during the same month the Tennessee Lumber Company built a steam sawmill in Tuckaleechee Cove, and erected a three-mile-long tramway "in preparation for an extensive lumber business."³⁹

³⁶Lambert, op. cit., p. 33.

³⁷Ibid.; Burns, op. cit., p. 230.

³⁸The Democrat (Maryville), April 15, 1882.

³⁹The Watchman (Maryville), June 21 and June 28, 1882.

In early 1883, a Maryville newspaper mentioned that "The lumber interests of our county seems to be flourishing," and later in the year two other Blount County newspapers reported that Maryville was undergoing a building boom.⁴⁰ By 1886 several lumber yards had been established and much lumber was being shipped out of the county. The Maryville Times, in early 1886, reported that R. A. McClanahan in Rockford was "running the lumber business for all it is worth."⁴¹

An examination of the Ellejoy area in the northeastern section of the county indicates the extent that timber activities and portable sawmills increased in Blount County. Some of this activity was in the form of custom work, but much of it was also commercial lumbering.⁴² By April 1886, ten different lumber companies were cutting lumber along Ellejoy Creek.⁴³ The kind of activity near Ellejoy may have been common in other parts of the county as well. J. E. Prater stated that in the late 1880s and early 1890s the area along the Tennessee River west of Louisville was saturated with portable sawmills.⁴⁴

⁴⁰Blount County Democrat, January 20, 1883; East Tennessee News, September 17, 1883; The Watchman, April 24, 1883.

⁴¹Maryville Times, February 17, 1886.

⁴²Maryville Times of January 6, 1886 reported that T. R. Vineyard, "the enterprising saw mill man," was doing custom work in the Ellejoy area.

⁴³Maryville Times, April 21, 1886.

⁴⁴J. E. Prater, op. cit.

Lumber enterprises were more active in the 1890s than in the previous decade. The floating of logs down the Little River from Tuckaleechee Cove to Rockford, accomplished through the use of "splash dams," received attention in local newspapers. In March of 1896 the Maryville Times reported that the "Little River got on a boom last week, and the Lumber Company turned a splash loose sending over a thousand logs through the cove."⁴⁵ In May 1896, the same newspaper stated that "The Little River Lumber Co. are [sic] continually "splashing," and every splash robs old Smoky of some of her valuable timber."⁴⁶

In addition to the exportation of lumber from the county, there was considerable local demand for lumber during the 1890s. Much of that demand was in Maryville, where building contractors, sash and blind factories, cabinet and furniture shops, and coffin makers all required lumber to manufacture their products. Some lumbermen specialized in supplying these local manufacturers. One of these, James Thomas, of Dry Branch in the northeastern part of the county, was reported to be furnishing Maryville with "lathes and lumber" in early 1891.⁴⁷

Much of the increased activity of the lumber industry in the 1890s was associated with the construction of the Knoxville

⁴⁵Maryville Times, March 26, 1896.

⁴⁶Maryville Times, May 9, 1896.

⁴⁷Maryville Times, February 11, 1891.

Southern Railway through the western part of the county in 1890.⁴⁸ The railroad ran parallel to the Tennessee River and passed through the villages of Louisville, Friendsville, Meadows, and Greenback (in Loudon County). As soon as the railroad was completed, shipments of lumber were being exported from the county. For example, James Bales and Company shipped several carloads of lumber from Friendsville during a one-week period in January of 1891.⁴⁹ In April of the same year, it was reported that "Jeff Jackson and others are busy hauling lumber from Big Springs [to Friendsville] to ship to Knoxville."⁵⁰

Several portable sawmill operators transferred their mills to sites along the railroad to reduce costs of transporting lumber. In May 1892 Cal Davis was preparing to move his mill from Pea Ridge to "down on the Knoxville Southern Railroad," and in October of that year W. G. Whitney of Block House was in the Cliff community "looking after a point to locate his large saw mill."⁵¹

The construction of the railroad also made it possible to ship very valuable logs from the county in unsawn form. In the spring of 1896, Jim Axle, of Loudon County, spent several months in the Friendsville and Alleghany areas where he purchased and

⁴⁸ Maryville Times, April 16, 1890; February 25, 1891; April 1, 1891.

⁴⁹ Maryville Times, January 14, 1891.

⁵⁰ Maryville Times, April 29, 1891.

⁵¹ Maryville Times, May 25, 1892; October 19, 1892.

shipped more than five carloads of walnut logs.⁵² During the fall of 1896 Will and Dave Ridge, of Alleghany, also shipped a large volume of valuable logs on the Knoxville Southern Railroad.⁵³

The rise in commercial lumbering facilitated the construction of frame houses in the county and thus contributed to the decline of log construction. The demand for the county's lumber resulted in an increase in the number of sawmills, especially small portable mills, and the increase in the number of sawmills greatly reduced distances traveled to sawmills to convert logs to boards. In many cases the portable sawmills virtually eliminated log hauling by individual farmers.

The increase in demand for lumber also presented the farmer with a cash crop. When a portable mill came to a farm to saw timber needed to build a house, the cost of sawing was paid with additional timber, which when sawed was stacked on wagons and hauled to market. The farmer often sold enough timber to not only pay for his building lumber but also to have enough money left over to pay for other building materials, such as nails, windows and doors, as well as the labor required to erect the residence.

The extent to which commercial lumbering was related to frame house construction can be seen clearly in the more isolated mountainous areas in southern Blount County. In Cades Cove, for example,

⁵²Maryville Times, April 2, 1896; May 28, 1896.

⁵³Maryville Times, November 21, 1896; December 19, 1896.

few frame residences had been erected before portable sawmills were brought to the area just after the turn of the century. The arrival of portable mills in the mountains was associated with the development of the Little River Lumber Company, founded in 1901 and headquartered at Townsend.⁵⁴

In 1900 the Little River Lumber Company quickly connected the mountains with outside markets by building a railroad which joined Townsend with the Knoxville and Augusta Railroad at Maryville.⁵⁵ Railroads were soon constructed along streams farther into the mountains, where the Little River Lumber Company had purchased 100,000 acres of timber land.⁵⁶ Cades Cove native Howard Sparks, born in 1892, remembers the impact of the Little River Lumber Company operations. He stated:⁵⁷

⁵⁴Burns, op. cit., p. 230.

⁵⁵Ibid.; Lambert, op. cit., p. 36.

⁵⁶Burns, op. cit., p. 230.

⁵⁷Howard Sparks, quoted in Vic Weals, "Cove Lumber Plentiful-- Road to Market Steep," Knoxville Journal, January 7, 1982. According to Sparks, prior to the construction of the Little River Railroad, some valuable lumber, particularly cherry, was sawed at the Cable water-powered sash sawmill and hauled to a coffin factory at Maryville. After construction of the railroad to Townsend, the haul was shortened but was still long enough that cheaper lumber, such as yellow pine, would not pay the costs of transporting it. Much of the commercial lumbering in Cades Cove was devoted to the sawing of white pine, which was found in abundance and sold for a relatively high price.

. . . two or three steam portable sawmills were moved into the cove after Little River Railroad came to Townsend about 1902. The wagon haul was shortened now, with most lumber out of the cove delivered to the train depot at Riverside [now Walland] at the lower end of Tuckaleechee Cove.

With the construction of the railroad and the arrival of portable sawmills, farmers in Cades Cove were able to have lumber sawed for their construction needs as well as sell timber as a cash crop.

By the 1890s logging and lumbering in Blount County provided jobs for a few hundred workers during at least part of the year. Some of the workers were likely yeomen farmers who worked seasonally as sawmill or logging hands. Wages earned off the farm may have contributed to the farmer's ability to construct a frame house.

IV. SUMMARY

The shift to frame construction between the 1870s and 1900 is closely associated with the increase in number of sawmills, the advent of the portable steam-powered circular sawmill, and the rise of commercial lumbering in Blount County. The difficulty in obtaining sawn lumber before the 1870s resulted largely from lack of access to sawmills. The number of portable mills increased from four in 1880 to at least 23 by the end of that decade, when frame construction became dominant. Such a dramatic increase in sawmill numbers made lumber more accessible to Blount County farmers. It was, however, the rise of the portable sawmill that brought revolutionary change to the county's sawmilling and construction industries. For the first time the mill could be transported to the

forest rather than logs having to be hauled to stationary mills for sawing.

In more isolated parts of the county the relationship between the portable sawmill and frame house construction was particularly strong. In Cades Cove, for example, a wave of frame house building followed the arrival of the mills just after the turn of the century.

The increase in number of sawmills, especially portable mills, was also related to the rise of commercial lumbering in the county. Not only was commercial lumbering responsible for the growth of sawmilling, it also provided farmers with a source of cash. When a sawmill was brought to a farm to cut timber needed to build a house, the cost of sawing could be paid with additional timber, which when sawed was stacked on wagons and hauled to market. Commercial lumbering thus played a significant role in the rise of frame house construction and the parallel decline in log dwelling construction in the county.

CHAPTER VIII

INNOVATIONS IN FRAME CONSTRUCTION AND THE DECLINE IN LOG HOUSE BUILDING

I. INTRODUCTION

Changes in sawmilling and the rise of commercial lumbering were active factors that brought about the rapid rise of frame construction and the decline of log construction. The rise in frame construction, however, would have been more difficult without innovations in frame construction. Before the Civil War Blount County houses were of heavy frame construction, which required the efforts of a skilled carpenter and helpers, and usually took relatively long periods of time to complete. After the Civil War two lighter construction techniques, balloon framing and box construction, became the accepted modes of house building. Both of these techniques required much less in the way of carpentry skills than did timber frame construction. This chapter discusses the impact of frame construction innovations on log house construction.

II. THE ROLE OF BALLOON CONSTRUCTION

After the Civil War, light or "balloon" frame construction spread to East Tennessee and Blount County. Whereas heavy frame construction was based on support of a structure by large braced corner posts, the principle of balloon construction called for a

building to be supported by a series of light posts and studs, all of which equally held up the weight of the structure (Figure 32). Although there are several permutations, balloon framing of the nineteenth century is essentially the same as modern "2 x 4" construction.

The advantages of balloon framing were being stated several years before its acceptance in East Tennessee. Solon Robinson, in 1855, offered a rationale for use of the balloon frame.:¹

To lay out and frame a building so that all its parts will come together, requires the skill of a master mechanic, and a host of men and a deal of hard work to lift the great sticks of timber into position. To erect a balloon-building requires about as much mechanical skill as it does to build a board fence. Any farmer who is handy with the saw, iron square and hammer, with one of his boys or a common laborer to assist him, can go to work and put up a frame for an outholding, and finish it off with his own labor, just as well as to hire a carpenter to score and hew great oak sticks and fill them full of mortices, all by the science of the "square rule." It is a waste of labor that we should all lend our aid to put a stop to. Besides it will enable many a farmer to improve his place with new buildings, who, though he has long needed them, has shuddered at the thought of cutting down half of the best trees in his woodlot, and then giving half a year's work to hauling it home and paying for what I do know is the wholly useless labor of framing.

Balloon construction was developed in Chicago in the early 1830s as a means of rapidly erecting inexpensive buildings during

¹Solon Robinson, New York Tribune, January 18, 1855, quoted in Gervase Wheeler, Homes for the People in Suburb and Country; the Villa, the Mansion, and the Cottage, Adapted to American Climate and Wants (New York: 1855); part of the book is excerpted in Leland M. Roth, editor, America Builds: Source Documents in American Architecture and Planning (New York: Harper and Row, 1983), pp. 54-56; the quote is from p. 56.



Figure 32. Balloon frame construction (Knox County, Tennessee, 1986).

the city's tremendous growth.² This light construction technique quickly spread through the Middle West and subsequently to the West, where it was instrumental in the development and expansion of cities, particularly San Francisco's growth during gold rush days.³ Although the new construction method was eventually accepted throughout the country, it may not have penetrated the South until after the Civil War. According to James Patrick, joinery was replaced by the nailed balloon frame in Tennessee about 1870.⁴

To assess the rate of acceptance of balloon construction in Blount County, it is important to know the prescribed balloon technique before the Civil War. Robinson offered the following as the proper method of balloon construction in 1855:⁵

. . . a great many farmers would like to know how to build a farm-house for half the present expense. I therefore

²The origin of the balloon frame is discussed in Sigfried Giedion, Space, Time, and Architecture (Cambridge, Massachusetts: 1967, 5th edition), pp. 352-353; Walker Field, Jr., "A Re-examination into the Invention of the Balloon Frame," Journal of Society of Architectural Historians, Vol. 2 (October 1942), pp. 3-29; Daniel J. Boorstin, The Americans: The National Experience (New York: Random House, 1965), pp. 149, 460; Paul E. Sprague, "The Origin of Balloon Framing," Journal of Society of Architectural Historians, Vol. 40 (December 1981), 311-319; Carl W. Condit, American Building, Materials and Techniques from the Beginning of the Colonial Settlements to the Present (Chicago: University of Chicago Press, 1982, 2nd edition), p. 43; Leland M. Roth, editor, America Builds: Source Documents in American Architecture and Planning (New York: Harper and Row, 1983), p. 53.

³Boorstin, op. cit., pp. 149-152; Condit, op. cit., pp. 43-45; Roth, op. cit., p. 53.

⁴Patrick, op. cit., p. 29.

⁵Robinson, op. cit., pp. 54-55.

ask the indulgence of the Club, while I start a balloon from the foundation, and finish it . . . I would saw all my timber for a frame-house, or ordinary frame outbuilding, of the following dimensions: Two inches by eight; two by four; two by one . . . First, level your foundation, and lay down two of the two-by eight pieces, flatwise, for sidewalls. Upon these set the floor-sleepers, on edge, thirty-two inches apart. Fasten one at each end, and perhaps, one or two in the middle, if the building is large, with a wooden pin. These end-sleepers are the end-sills. Now lay the floor . . . It is a great saving . . . of labor, to begin at the bottom of a house and build up. In laying the floor first, you have no studs to cut and fit around, and can let your boards run out over the ends, just as it happens, and afterwards saw them off smooth by the sill. Now set up a corner-post, which is nothing but one of the two-by-four studs, fastening the bottom by four nails; make it plumb, and stay it each way. Set another at the other corner, and then mark off your door and window places, and set up the side-studs and put in the frames. Fill up with studs between, sixteen inches apart, supporting the top by a line or strip of board from corner to corner, or stayed studs between. Now cover that side with rough sheeting boards, unless you intend to side-up with clap-boards on the studs, which I never would do, except for a small, common building. Make no calculation about the top of the studs; wait until you get up that high. You may use them of any length, with broken or stub-shot ends, no matter. When you have got this side boarded as high as you can reach, proceed to set up another. In the meantime, other workmen can be lathing the first side. When you have got the sides all up, fix upon the height of your upper floor, and strike a line upon the studs for the under side of the joist. Cut out a joist four inches wide, half-inch deep, and nail on firmly one of the inch strips. Upon these strips rest the chamber floor joist. Cut out a joist one inch deep, in the lower edge, and lock it on the strip, and nail each joist to each stud. Now lay this floor, and go on to build the upper story, as you did the lower one; splicing on and lengthening out studs or wherever needed, until you get high enough for the plate. Splice studs or joist by simply butting the end together, and nailing strips on each side. Strike a line and saw off the top of the studs even upon each side--not the ends--and nail on one of the inch strips. That is the plate. Cut the ends of the upper joist the bevel of the pitch of the roof, and nail them fast to the plate, placing the end one inside the studs, which you will let run promiscuously, to be cut off by the

rafter. Now lay the garret-floor by all means before you put on the roof, and you will find that you have saved fifty percent of hard labor.

The period from the end of the Civil War to the early 1880s was one of transition from heavy to light frame construction in Blount County. The Dr. Andrew Jackson Taylor house, built in the northeastern part of the county ca. 1868-69, was similar to the light or balloon construction prescribed by Robinson in 1855. Conversely, the Elisha Jones house, built near Friendsville in 1884, was of braced and joined timber frame construction. Other such "light" and "heavy" frame houses were built during the period. Most represented a shift toward balloon construction, although most structures had heavier elements than recommended by Robinson.

By the early 1880s most houses in the county could be called balloon, having been erected with lighter materials than previously and held together completely with nails. In the 1880s residences were constructed in Maryville and other towns and villages much as Robinson suggested. Country farm houses, however, were generally of somewhat heavier materials, especially the sills, floor sleepers, and corner posts. In the 1890s house construction in the county was lighter than in the 1880s and most houses could be described as balloon structures, although some were of an even lighter innovation, box construction. No timber frame house is known to have been built after 1884.

Balloon dwellings could be erected much more cheaply, quickly, and simply than timber frame houses and the use of the

balloon frame coincides with the rise of frame construction and the decline of log construction in Blount County. The acceptance of the balloon frame made possible the rapid construction of houses and other buildings in Maryville and smaller towns in the 1880s and 1890s. The same is true for rural areas, where many farmers would have erected log residences, if the balloon frame had not been known and accepted.

III. THE ROLE OF BOX CONSTRUCTION

In addition to balloon framing, another building innovation, "box" construction, contributed greatly to the decline of log construction in Blount County. Box construction, consisting of a single wall of vertical planks rather than the conventional double-wall technique, was much easier and cheaper to build than balloon framing (Figure 33). Dianne Tebbetts' description of box construction applies to the single-wall buildings of Blount County:⁶

In box construction, sills are placed on a foundation, wide boards are nailed on vertically at each corner, and a two-by-four is nailed on horizontally along the tops of these vertical boards. Additional vertical boards are attached to form a single-thickness wall with no framing at all. Ceiling joists tie in together, and doors and windows sit in holes cut in the walls for them, their casing usually projecting into the rooms. In a very few houses two-by-four studs run from floor to ceiling inside to support the windows and doors . . . narrow strips of wood are nailed on outside over the cracks to produce board-and-batten siding.

⁶Dianne Tebbetts, "Traditional Houses of Independence County, Arkansas," Pioneer America, Vol. 10, No. 1 (June 1978), p. 43.



Figure 33. Typical box house (Blount County, 1984).

Although vertical plank wall construction was developed relatively recently in East Tennessee, its existence in New England dates to the seventeenth century.⁷ Plank wall construction is believed to have evolved from grooved-post construction which was brought to the New World from Europe, probably Scandanavia.⁸ Vertical plank construction did not, however, become very popular in the United States, where the timber frame and subsequent balloon frame generally were sided with horizontal clapboards.

Vertical board and batten siding as a frame covering was popularized in the books of several American architects from the late 1830s through the 1850s.⁹ Board and batten may have enjoyed some popularity in parts of the country before the Civil War, but no evidence of its acceptance in antebellum East Tennessee has been uncovered. Some years after the Civil War, however, board and batten houses became very popular in the South. They were not elegant structures worthy of portrayal in architectural handbooks, but plain structures of the common folk. The board and batten of the South was not a siding for timber of balloon frame, but a single wall

⁷Walter R. Nelson, "Some Examples of Plank House Construction and Their Origin," Pioneer America, Vol. 1, No. 2 (July 1969), pp. 18-29.

⁸T. Ritchie, "Plankwall Framing, a Modern Wall Construction with an Ancient History," Journal of Society of Architectural Historians, Vol. 30 (1971), pp. 66-70; Robert Jensen, "Board and Batten Siding and the Balloon Frame: Their Incompatibility in the Nineteenth Century," Journal of Society of Architectural Historians, Vol. 30 (1971), p. 41.

⁹Jensen, op. cit., pp. 41-42.

construction technique commonly referred to as box construction.¹⁰

It is not known when box construction first appeared in East Tennessee, but a few such houses may have been built in Blount County during the late 1870s. Box houses became common in the county during the 1880s and larger numbers were erected during the 1890s and early 1900s. Relatively few of the pre-1900 box houses, perhaps 50, remain on the landscape today, at least in an unmodified form.

Because the board and batten box houses were not as well built as the heavier, weatherboarded balloon houses, a higher percentage of the box structures have been abandoned or destroyed. Many of Blount County's original box houses still exist, however, but in different forms. They often have had their battens stripped off and replaced with conventional horizontal siding, although a few of them may have been sided with weatherboarding at time of original construction. In addition, a considerable number of box houses have been converted to balloon frame structures, with the insertion of corner posts and wall studs and an inside wall. Finally, some box houses have been camouflaged by the addition of

¹⁰Ella Enslow, Schoolhouse in the Foothills (New York: Simon and Schuster, 1935), pp. 35-36; A. E. Scott, "A Visit to Mitchell and Roan Mountains," Appalachia, Vol. 4, No. 1 (December 1884), p. 15; M. B. McMahon, James McMahan First, From Dublin, Ireland, Patriot of the Revolutionary War (Sevierville, Tennessee: M. B. McMahan, 1980), p. 12; Tebbetts, op. cit., p. 43; E. Raymond Evans, "The Strip House in Tennessee Folk-Architecture," Tennessee Folklore Society Bulletin, Vol. 42, No. 4 (December 1976), pp. 163-166; Eller, op. cit., p. 27.

modern siding, such as asbestos shingle, aluminum siding, and vinyl siding.

Although some yeomen farmers built box houses, most of them were associated with poor people. Many box houses were erected by small farmers who owned property, but a large number were also constructed as tenant houses. According to J. E. Prater, his father, "Buffalo" Jim Prater, built two box houses for tenants on his Tennessee River farm in the late 1880s.¹¹ Two box houses, erected by Dr. Sam Lane for his tenants in the 1880s or 1890s remain on the old Lane farm in the Brick Mill community.¹²

Box construction played an important role in the decline of log construction during the latter part of the nineteenth century. Board and batten houses were built for both economic and social reasons. They required much less material to construct than did balloon construction and they required little skill or time to erect. A landlord was attracted to a "boxed" tenant house primarily because of its low cost. Without the knowledge and acceptance of box construction, landlords often would have selected log construction over balloon framing. Box houses were even cheaper to build than log houses if the value of timber needed is considered. From the tenant's perspective, a new box house, plain as it was, probably

¹¹J. E. Prater, Louisville, Tennessee, Personal Interview, June 1984.

¹²Shirley Hall, Greenback, Tennessee, Personal Interview, April 1984.

was an attractive perquisite to tenancy with a particular landlord.

The small farmer undoubtedly was impressed by the inexpensive cost of construction of the box house. Perhaps more importantly, however, the box house represented a chance for a poor farmer to discard his log house and live in a more socially acceptable sawn plank house. Without the possibility of building a box residence, the poor farmer would have likely built a log house rather than the more expensive balloon frame house.

A. E. Scott, visiting the western North Carolina mountains in 1884, indicated that the box house had a higher status in the area than a log dwelling:¹³

We soon arrived at his brother's house,--a house made of sawed lumber, and more pretentious than the log cabins of the region. The cracks between the rough boards were even battened, and it had several openings intended eventually for glass windows. The usual broad veranda stretched across the front, and huge stone chimneys stood outside each end. Inside it was divided by a board partition into two rooms, and each room had outside doors opening front and back.

The decision by a small farmer to build a flimsy box house in place of a log structure was not necessarily a wise one. Ella Enslow offered a low opinion of box houses when compared with the log houses of the Appalachian hollow in which she lived in the early part of the century:¹⁴

¹³Scott, op. cit., p. 15.

¹⁴Enslow, op. cit., pp. 35-36.

Aside from Harrison Gowell's the houses were all of logs, or--worse still--of rough plank with battened seams. That single inch-thick skin of plank with leaking crevices is a far poorer protection against cold than log walls, which can make a room very snug in winter.

In spite of the obvious inadequacies of box house construction, the board and batten plank dwelling became popular in Blount County during the late nineteenth century. The building's cheapness of construction made it possible for the members of the poorer class to discard their log houses and live in residences that they believed enhanced their social status. If the acceptance of balloon construction represented an accelerated decline in log house construction, the increased popularity of box construction near the turn of the century signaled log construction's ultimate demise.

IV. SUMMARY

The decline of log house construction and concomitant rise of frame house construction would likely have been delayed had it not been for innovations in frame construction techniques. Before the Civil War houses were built of timber frame construction, which required the efforts of a skilled carpenter and helpers and usually took relatively long periods of time to complete.

After the Civil War light or balloon framing spread to East Tennessee and Blount County. By the mid-1880s the balloon frame had completely replaced the heavier timber frame in house building. Whereas in timber framing the weight of a structure was supported by large braced corner posts, a balloon structure was supported by numerous light wall studs as well as light corner posts, with all

members of the frame equally receiving the weight of the building. The advantages of light frame construction were that buildings could be erected very quickly and relatively cheaply and such construction required minimal carpentry skills.

The advent of balloon framing thus contributed significantly to the rise of frame construction in Blount County during the 1880s and 1890s, when greater availability of sawn lumber made such construction more feasible than in earlier decades. Without the adoption of balloon construction and an even lighter innovation, box construction, log construction would have retained some of its pre-Civil War advantages over frame construction.

Box construction, consisting of a single-wall of vertical planks rather than conventional double-wall techniques, was even easier and cheaper to build than balloon framing. Box construction is probably most responsible for the virtual demise of log construction during the 1890s, because its cheapness and ease of construction made frame dwellings feasible for the poor people of Blount County.

CHAPTER IX

CONCLUSIONS

During the course of gathering background field information on log house form and construction characteristics, it became evident that some conclusions in the literature about Upland South and Tennessee log houses are inaccurate when applied to East Tennessee. The two most obvious discrepancies between the generalizations in the literature and the characteristics of log house form and construction techniques in East Tennessee are:

(1) East Tennessee log houses do not fit neatly into the rectangular-square pen dichotomy put forth by Glassie and subsequently stressed by Jordan and Noble.¹ East Tennessee log pens may be evidence that the ethnic associations of pen form had become blurred or even non-existent by the time log construction spread to the area.

(2) The typical double-pen log house in East Tennessee is not the dogtrot type reported by Schofield and Crutchfield to be dominant in the state. All three double-pen house types are common in East

¹Henry Glassie, "Types of the Southern Mountain Cabin," in Jan H. Brunvand, Editor, The Study of American Folklore (New York: W. W. Norton, 1968), pp. 338-370; Terry G. Jordan, Texas Log Buildings: A Folk Architecture (Austin: University of Texas Press, 1978), pp. 108-111; Allen G. Noble, Wood, Brick, and Stone: The North American Settlement Landscape, Vol. 1: Houses (Amherst: University of Massachusetts Press, 1984), p. 114.

Tennessee, but field data indicates that the saddlebag house is the most numerous type.²

In addition, Jordan has challenged the view that cultural tradition accounts for geographic patterns of corner notches on log houses by claiming that timber type was a predictor of notch type in Texas.³ Notches on East Tennessee log houses exhibit no association with timber type and appear to be the product of cultural tradition and not an adaptation to an environmental condition. Continued research is needed to better explain the discrepancies between findings in East Tennessee and those in the existing literature.

Several reasons have been presented in the literature for the decline of log house construction, but prior to this study none of them had been tested empirically. This study determined to what extent the reasons given for the decline of log house construction explain the decline of log dwelling construction in Blount County, Tennessee. In so doing, the study analyzed the influence of five factors on the decline of log house construction: (1) increasing wealth, (2) a changing agricultural economy, (3) social stigma, (4) changes in sawmilling and lumbering, and (5) innovations in frame construction.

²Edna Scofield, "The Evolution and Development of Tennessee Houses," Journal of the Tennessee Academy of Science, Vol. 11 (1936), p. 232; James A. Crutchfield, "Pioneer Architecture in Tennessee," Tennessee Historical Quarterly, Vol. 35 (1976), p. 173.

³Jordan, op. cit., p. 76.

Among the factors only changes in sawmilling and lumbering and innovations in frame construction were found to have played major roles in the decline of log construction in the study area. The changing agricultural economy appears to have been of little importance, and it is difficult to assess the influence of wealth and social stigma, although both were responsible for the abandonment of some log houses as well as the construction of some frame structures in Blount County.

A significant discovery is the strong correlation between the decline of log construction and rise of light or balloon framing and the even lighter box construction. No such relationship has been previously established in the literature, although both Wilson and Hutslar appear to imply the existence of a relationship between the decline in log construction and the rise of balloon framing, and Eller and Tebbetts have stressed the importance of the box house as a landscape element in Appalachia and Arkansas.⁴ The balloon frame and box construction were both firmly established through the South during the latter half of the nineteenth century, and it seems highly likely that both construction techniques would have played a role similar to that in Blount County in other areas

⁴Eugene M. Wilson, Alabama Folk Houses (Montgomery: Alabama Historical Commission, 1975), pp. 25-26; Donald Hutslar, The Architecture of Migration: Log Construction in the Ohio Country, 1750-1850 (Athens: Ohio University Press, 1986), p. 38; Ronald D. Eller, Miners, Millhands, and Mountaineers: Industrialization of the Appalachian South, 1880-1930 (Knoxville: University of Tennessee Press, 1982), p. 27; Diane Tebbetts, "Traditional Houses of Independence County, Arkansas," Pioneer America, Vol. 10, No. 1 (1978), p. 43.

of post-Civil War log construction. Moreover, if log house construction declined rapidly in a particular area, it would have been virtually impossible for the antecedent heavy timber frame house, which required considerable time, effort, and carpentry skills to construct, to have rapidly replaced the log dwelling.

The role that balloon framing played in providing urgently needed housing in upstart American towns has been recognized by Boorstin, but little is known of the actual pattern of diffusion of balloon construction.⁵ Was there, for example, a hierarchical diffusion of the balloon frame house from large cities to smaller cities and eventually to small towns? If so, did rural areas around larger cities and towns receive and accept it before other rural areas? If that was the case, the decline of log construction should have been slower in rural areas around small settlements than in areas which first accepted the balloon frame.

Even less is known about the history of box construction than about that of balloon construction in the United States. Box houses are often observed on photos of early mining and timber settlements of the Upland South. Was the spread of such settlements responsible for the early diffusion of the box house in the South or were such mining settlements the recipients of a spreading construction innovation?

⁵Daniel J. Boorstin, The Americans: The National Experience (New York: Random House, 1965), p. 148.

This study revealed that the decline in log construction in Blount County is closely associated with an increase in number of sawmills, the advent of portable steam-powered circular sawmills, and the rise of commercial lumbering. The increase in number of sawmills has been mentioned as a critical factor in the decline of log construction by Eller for Appalachia and by Zelinsky for Georgia.⁶ No other studies, however, have identified the vital role of the portable sawmill in the decline of the log house.

It is difficult to imagine the rapid decline of log construction in most parts of the Upland South without the portable sawmill because lumbering operations would then have been limited only to stream sites. Extending Zelinsky's work would likely reveal that many of the sawmills he reported being added in Georgia after the Civil War were, in fact, portable mills. The literature has established that some of the neighborhood mills of Appalachia, cited as important to the decline of log construction by Eller, were also portable mills.

During the late 1890s and early 1900s there were as many as 40 steam-powered portable circular sawmills in the Tellico Plains area of East Tennessee, as part of the initial thrust of commercial

⁶Eller, op. cit., pp. 23, 26; Wilbur Zelinsky, "The Log House in Georgia, Geographical Review, Vol. 43 (1953), p. 181.

lumbering into that part of the region.⁷ It would be logical to expect that the shift from log to frame construction in the Tellico Plains area would coincide with the spread of the portable sawmill. Because the portable mills were cutting "the smaller timber of farmers and residents of the Tellico area," some of those selling timber most likely retained lumber to build a house and also used money derived from the sale of timber to pay for construction costs of the house.⁸

There was a strong correlation between the diffusion of the portable sawmill and the rise of commercial lumbering in Blount County. Commercial lumbering provided local lumber supplies but also prepared lumber for export from the county. The rise of commercial lumbering was greatly facilitated by the construction of railroads, which opened regional and distant markets for Blount County lumber. At the same time railroads served to bring goods into Blount County from outside areas. Imported goods might have included lumber for purchase, but there is no evidence that Blount County relied on imported lumber during the nineteenth century. If log house dwellers had access to imported lumber and could afford to buy it, they could build frame houses without the presence of local sawmills. No such evidence, however, has been discovered for Blount County.

⁷Robert N. Van Benthuyzen, Jr., "The Sequent Occupance of Tellico Plains, Tennessee," Unpublished Master's Thesis, The University of Tennessee, Knoxville, 1951, pp. 31-42.

⁸Ibid., p. 39.

Further research should be carried out in an area of the Upland South where log houses were dominant at the time of railroad construction and where there was little or no commercial logging and sawing operations in the area. The purpose of such research would be to determine if railroad penetration alone resulted in the decline of log construction in a particular area. Willis has stated that in Southwest Virginia log construction declined as railroads, coal mining, and timber operations came to the area.⁹ Were there areas where railroads penetrated and coal mining developed but commercial logging and sawmilling did not develop? If so, did log construction decline without the presence of local timber activities?

Pillsbury and Hutslar have indicated that the persistence and decline of log construction in Pennsylvania and Ohio were related to the degree of affluence in a particular area.¹⁰ That is, log construction declined first in affluent areas and remained longest in poor areas. In Blount County, wealth was associated with antebellum non-log house construction because brick and frame house builders were affluent farmers and merchants. However, such a relationship is difficult to establish for the post-bellum period in which log houses were replaced by frame structures. In fact, by

⁹Stanley Willis, "Log Houses in Southwest Virginia, Tools Used in Their Construction," Virginia Cavalcade, Vol. 21, No. 4 (Spring, 1972), p. 37.

¹⁰Richard Pillsbury, "Patterns in the Folk and Vernacular House Forms of the Pennsylvania Culture Region," Pioneer America, Vol. 9, No. 1 (1977), p. 29; Hutslar, op. cit., p. 38.

1890 frame construction was associated with virtually all segments of the rural community. Increased wealth derived from the sale of farm timber made frame houses possible for some residents of the county, but there is a lack of documentation of a general relationship between wealth and house construction during the late 1800s in Blount County.

Pillsbury and Hutslar may have been correct in their assessment of reasons for the persistence and decline of log construction in Pennsylvania and Ohio. Their conclusions cannot be accepted, however, until evidence of historic and regional patterns of log house construction decline are presented and then compared with patterns of affluence. According to Hutslar, log house construction had declined in most areas of Ohio by 1850, and although Pillsbury provides no evidence, it is likely that the same is true for Pennsylvania. If log house construction did decline before 1850 in those areas and if the decline was related to wealth, it could be hypothesized that the decline of log dwelling construction in areas in which log construction lasted for longer periods, especially areas in which the log house pervaded during the post-Civil War period, was not strongly related to significant increases in wealth. Other factors such as access to sawmills and innovations in light frame construction techniques made it considerably cheaper to build a frame house than before the Civil War.

There is no evidence that Cades Cove, in Blount County, was poorer than many other sections of the county at the beginning of

the twentieth century. The people of Cades Cove, however, were still living in log houses while those in other sections of the county were, for the most part, living in frame houses. It was a lack of access to sawmills, especially portable sawmills, that made Cades Cove the last area in Blount County to have most of its families living in frame houses.

Changes in wealth should not, however, be discounted without further research. Detailed examinations of wealth in areas outside Blount County should be conducted if data on wealth can be obtained. The loss of 1890 census manuscripts for the entire United States and the loss of some of the 1900 manuscripts, including those for Blount County, make difficult the task of examining patterns of late nineteenth century wealth.

Lounsbury has associated the decline of self-sufficient building techniques, in which he included log construction, in North Carolina with the rise of a market-oriented agricultural economy.¹¹ No evidence has been uncovered to document such a relationship in Blount County during the late 1800s, although the construction of railroads during that period offered greater access to markets for farmers than existed during earlier periods.

One of the problems in comparing Blount County findings with those of Lounsbury in North Carolina is that he implied that log

¹¹Carl Lounsbury, "The Building Process in Antebellum North Carolina," North Carolina Historical Review, Vol. 60 (1983), p. 435.

construction declined during the antebellum period. That is not completely accurate because there is little doubt that the log house was the dominant dwelling in much of mountainous western North Carolina during the late 1800s. It is also unlikely that most of western North Carolina had shifted from a self-sufficient agricultural economy to a highly commercial agricultural economy by that time. Lounsbury apparently generalizes about the whole state of North Carolina based on findings in the more agriculturally oriented coastal plain and piedmont sections of the state.

Although further research is needed before "a changing agricultural economy" can be fully evaluated as a factor in bringing about the demise of log construction, any investigation of the topic will be made difficult because U. S. census manuscripts are missing or lacking for some of the critical periods in need of study.

Jordan suggested that the social stigma of living in a log house contributed greatly to the decline in construction of such buildings in nineteenth century Texas, and Wilson stated that change from a log to a frame house represented a step toward a higher social status in Alabama.¹² It is likely that by the latter part of that century many East Tennesseans also considered it socially unacceptable to live in non-sided log houses, but little evidence

¹²Terry G. Jordan, *op. cit.*, p. 5; Wilson, *op. cit.*, p. 73.

of a social stigma has been documented for Blount County. The widespread acceptance of the box house during the late 1800s may indicate that at least some Blount Countians preferred to live in frame houses of the poorest quality rather than live in more substantial log houses.

Evidence of variations in period of decline of log house construction, within relatively small areas, may indicate that social stigma was of minor importance in bringing about change in type of house construction. For example, the same social pressure to replace log houses with frame ones may have existed in Cades Cove as in certain other parts of Blount County even though the time of frame construction was later in Cades Cove.

Peirce Lewis has stated that rapid landscape change is usually "provoked by such great events as wars, depressions, and major inventions."¹³ In Blount County, it appears that technological innovations (light construction techniques and the portable saw-mill), the rise of commercial lumbering, and railroad construction were the major events that, acting in concert, provoked the shift to frame construction.

Additional research is needed to improve our understanding of spatial-temporal patterns of log house dominance and decline as well as factors responsible for the existence of such patterns.

¹³Peirce Lewis, "Axioms for Reading the Landscape," in D. W. Meinig, Editor, The Interpretation of Ordinary Landscapes: Geographical Essays (New York: Oxford University Press, 1979), p. 23.

An understanding of such patterns can lead to conclusions about the changing character of areas. A decline in log house construction may indicate, for example, that a particular area has become less isolated and is converging culturally with other areas where frame construction was already common.

If one is to understand the reasons for the decline of log house construction in an area, it is imperative that the historic pattern of decline be accurately described. This study has shown that log house construction declined rapidly during the 1880s and 1890s in Blount County. This finding does not represent an unexpected occurrence, but simply illustrates Lewis' concept of landscape change, that of "historic lumpiness." The concept holds that "Most major cultural change does not occur gradually, but instead in great sudden historic leaps . . ."¹⁴

A rapid decline in log construction is consistent with the findings of some students of log construction, but has not been reported by others who have addressed the subject. Jordan has stated that there was a precipitous decline in log construction in Texas, where it lasted from about 1815 to 1940 with construction of log dwellings lasting approximately thirty to fifty years in eastern Texas, the part of the state where most log structures

¹⁴Lewis, op. cit., p. 23.

were built.¹⁵ In contrast, Zelinsky claims that in Georgia log house construction declined steadily after the Civil War until the 1950s.¹⁶ Others, such as Pillsbury, writing on log construction in Pennsylvania, offer reasons for the decline of log house construction, but provide no information on the time of the decline.¹⁷

One can conclude that the reasons given in the literature for the decline of log construction are not only assertions, but in some cases are based on imprecise historical data. This dissertation represents the first detailed study of the decline of log house construction and a subsequent study should use the findings of this work as hypotheses to be tested in another area.

This study has contributed to a better understanding of the pattern and causes of change of a once-dominant landscape element in rural East Tennessee. Research on the changing status of an element of the cultural landscape has additional value because it can demonstrate, as this study has, that a change in the status of a basic landscape element is indicative of other socioeconomic or technological changes. Such studies are therefore important because they contribute to a better understanding of the evolving character of places.

¹⁵Jordan, *op. cit.*, pp. 5, 27, 29.

¹⁶Zelinsky, *op. cit.*, p. 181.

¹⁷Pillsbury, *op. cit.*, p. 29.

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